

NOVEMBER
(NOVEMBER-DECEMBER)
1946

CHEMICAL PREVIEW

In this issue

90 Articles Covering

NEW SOLUTIONS of
PLANT PROBLEMS

DEVELOPMENTS in
PRODUCTION MATERIALS

PROCESS INSTRUMENTS
and CONTROLS

PRACTICAL IDEAS

ADAPTABLE to PROCESSING

MACHINERY and EQUIPMENT
DEVELOPMENTS



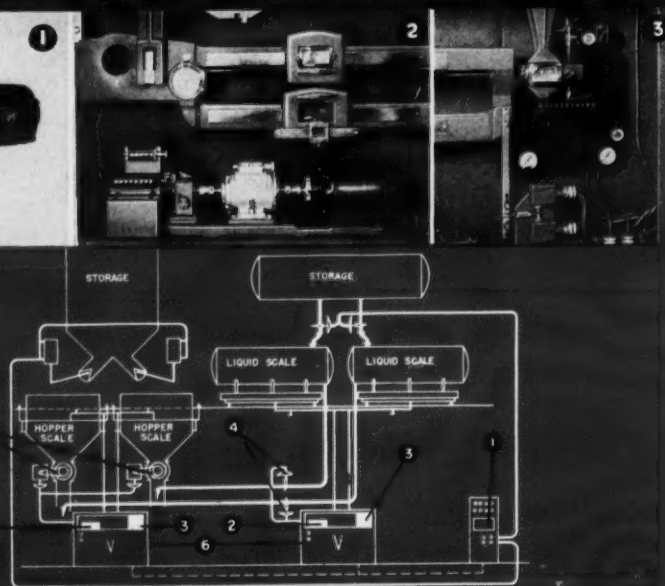
Streptomycin production now increased by deep fermentation process — all conditions relating to submerged growth are recorded

Greater Accuracy-Closer Control

WITH %PROPORTIONEERS% "LOSS-IN-WEIGHT" SYSTEM

THE
ULTIMATE
IN
FLEXIBILITY

Schematic flow diagram for blending dry and liquid ingredients.



Variable Speed Master Control Unit (1) regulates individual rate of component feeds through Secondary Synchronized Variable Speed Drives (2) which operate Loss-in-Weight Scales (6). Total blend rate and individual feeds are regulated at dials (A) and (B) (with verniers graduated to 1 part in 400). Any departure from rates set is automatically corrected by Control Units (3) which position either Fluid Control Valves (4) or regulate speed of Rotary Feeding Heads (5) on dry materials.

Ask for Brochure

%Proportioneers% "Loss-in-Weight" System is the modern, completely flexible method for continuous compounding. It automatically maintains pre-set component ratios or permits infinite adjustments in formula or total rate without interrupting the process. This and other new %Proportioneers% continuous production methods anticipate tomorrow's requirements in the fast-moving process industries. Look to %Proportioneers, Inc.% for up-to-the-minute engineering advice and the latest proportioning equipment — flow responsive or constant rate.

% PROPORTIONEERS, INC. %

WRITE TO %PROPORTIONEERS, INC.%, 41 CODDING ST., PROVIDENCE 1, RHODE ISLAND

Technical service representatives in principal cities of the United States, Canada and Mexico.

"That's Interesting"

Catalytic Cracking For Small Refineries

Catalytic cracking is both economically feasible and practical for owners of small refineries by the Thermoform Catalytic Cracking Method. Small TTC units can be designed to process upwards of 1000 BPSD of virgin charging stocks ranging from heavy naphthas to vacuum distillates. The unit is characterized by high yields and high quality liquids with liquid recoveries ranging from 97 per cent to over 100 per cent. A test case demonstrates that gasoline can be manufactured at a cost of 4.8 cents per gallon, exclusive of taxes and depreciation. To obtain these results catalyst activity is maintained at a high level by careful control of regeneration conditions through zone regeneration of catalyst. (As reported by Houdry Process Corp., New York.)

Dried in 45 Seconds

Forty-five seconds after a layer of wet wood-pulp enters a modern kraft paper machine, it emerges as a sheet of dry paper, ready to be made into paper bags for grocery and other stores. (Union Bag & Paper Co.)

Glareless Glass

Methods developed during the war are now being applied to control light reflection from glass, plastics, paper and photographic prints. These same methods can be used to increase reflectivity as well as reduce it. These new reflection control techniques employ new chemicals and the coatings are either dipped, spun, sprayed or swabbed on glass, etc. Pastel shades of different colors can be produced by the techniques. This high reflecting glass can be used for windows that will reflect the hot rays of the sun and for one way glass doors on ovens and refrigerators. In the latter case, the glass is dark until a light is turned on when it becomes transparent. (Aminco Lab News-American Instrument Co., Silver Spring, Md.)

Flame Spraying Plastics

Oxacetylene flame and plastics seem unsuited for contact with each other but plastic powders are being flame sprayed on surfaces. The powdered material passes through the flame in milliseconds of time, which is too fast for melting before actual contact with the object sprayed. (Ohmite News.)

Vapor Lamp Gives More Light For High Ceiling Factories

A new mercury vapor lamp for lighting high ceilinged factories gives three times the light of a 1000 watt incandescent bulb yet has a mercury vapor space about the size of two cigarettes end to end. (Chemical Digest—Foster D. Snell, Inc., Brooklyn, N. Y.)

(Continued on next page)

For more information on product at left, specify CP A5719 . . . see information request blank between pages 2-3.

Check Below For Product Information

NOVEMBER-DECEMBER, 1946

EVERY PRODUCT DESCRIBED IN THIS ISSUE IS LISTED ON THIS SHEET. Check items that interest you, fill in your name and address on reverse side and mail to publisher. Information comes to you direct, without obligation.

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<input type="checkbox"/>	A5720 Stainless-Steel Equipment	<input type="checkbox"/>	A5784 Unpolymerized Vinyl Acetate	<input type="checkbox"/>	A5848 Abraser	<input type="checkbox"/>	A5910 Synthetic Organic Chemicals
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<input type="checkbox"/>	A5724 Calcining Process	<input type="checkbox"/>	A5788 Chemicals	<input type="checkbox"/>	A5852 Vacuum Pumps & Blowers	<input type="checkbox"/>	A5914 Jacket Water Coolers
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<input type="checkbox"/>	A5730 Strainers	<input type="checkbox"/>	A5794 Butyl Sterate	<input type="checkbox"/>	A5855 Electric Unit Heaters	<input type="checkbox"/>	A5920 Processing Equipment
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<input type="checkbox"/>	A5734 Fork Trucks	<input type="checkbox"/>	A5798 Acetonitrile	<input type="checkbox"/>	A5859 Laboratory Equipment	<input type="checkbox"/>	A5924 Tank Rotostats
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<input type="checkbox"/>	A6013 Flared Tube Fittings	<input type="checkbox"/>	A6064c Air Motors	<input type="checkbox"/>	A6119 Welded Piping	<input type="checkbox"/>	A6175 Conveyors
<input type="checkbox"/>	A6014 Weather Testers	<input type="checkbox"/>	A6065 Oxygen Masks	<input type="checkbox"/>	A6120 Respirators	<input type="checkbox"/>	A6176 Lighting Hoods
<input type="checkbox"/>	A6015 Worm Gear Speed Reducers	<input type="checkbox"/>	A6066 Spout-type Magnets	<input type="checkbox"/>	A6121 Low Range Tester	<input type="checkbox"/>	A6177 Hi-Pressure Steam Cleaners
<input type="checkbox"/>	A6016 Electronic Heating Generators	<input type="checkbox"/>	A6067 Stirring Equipment	<input type="checkbox"/>	A6122 Portable Conveyors	<input type="checkbox"/>	A6178 Steam Traps
<input type="checkbox"/>	A6017 Bench Filters	<input type="checkbox"/>	A6068 Boiler Tube Expander	<input type="checkbox"/>	A6123 Stainless-Steel Fittings	<input type="checkbox"/>	A6179 Self-feeding Sandblast
<input type="checkbox"/>	A6018 Stainless-steel Fastenings	<input type="checkbox"/>	A6069 Dust Collectors	<input type="checkbox"/>	A6124 Electric Immersion Heater	<input type="checkbox"/>	A6180 Condenser Tube Inserts
<input type="checkbox"/>	A6019 Stainless Steel	<input type="checkbox"/>	A6070 Screens	<input type="checkbox"/>	A6125 Lubricating Equipment	<input type="checkbox"/>	A6181 R40 Infra-red & Flood Lamps
<input type="checkbox"/>	A6020 Circular Cutter Bit	<input type="checkbox"/>	A6071 Motors for Pumps	<input type="checkbox"/>	A6126 Book — Engineer At Law	<input type="checkbox"/>	A6182 Processing Equipment
<input type="checkbox"/>	A6021 Strapping Machine	<input type="checkbox"/>	A6072 Atomizing Nozzles	<input type="checkbox"/>	A6127 Pumps	<input type="checkbox"/>	A6183 Bag Packing Systems
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 City Zone State

Fill in and mail this form to **CHEMICAL PREVIEW, 737 N. Michigan Ave., Chicago 11, Illinois**

"That's Inter"

Contributions of A Project to Industrial

The October issue of the in a "Production Personal lines the career of Harold of M. W. Kellogg Co. and of the subsidiary Kellogg combine the knowledge ence and culminate in the 25 plant at Oak Ridge, Tennessee source of U-235 for atomic menting on the vital pro come out of the project to article points to the follo corrosion techniques, whic lions annually in the conse equipment and material, breakdowns and more oc New and safer means to hydrogen fluoride, importa tion of aluminum and r catalyst in oil refining. N exchangers which especial fining, chemical and pro New mass spectroscopes v cracking operations and t ses in refineries and othe New diffusion barrier res help separate helium from drogen from process gases techniques in gas recycli tectors to locate leaks in vacuum processing like vit or to detect vacua in metal vistor's Reader is publ Lynch, Pierce, Fenner & S, N. Y.)

Forecast \$50,000, Ceramic Bu

The ceramic and wall ti pates manufacturer's sal \$50,000,000 annually as housing programs are un eral construction reaches One of the many applica tile will be used in swi vey indicate that more will be constructed with years.

Dyes Mixed with W ing Agent offer P Permanently "Pair

Soft maple can now be m maple by saturating the w olurea. This penetrates o cizes the cell walls. This p mean the conserving of but also an economic ass the cheaper woods which When this saturation is pressure, permitting mix the plasticizing agent it those who would like to of colored wood with a (From the Agitator — Hoosick Falls, N. Y.)

(Continued on inside)

For more informat
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"Interesting"

**ons of Atomic Bomb
Industrial Techniques**

Issue of the Investor's Reader,
on Personalities" article, out-
of Harold Raymond Austin
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knowledge of American Sci-
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Ridge, Tenn. — a principle
for atomic bombs. In com-
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is published by Merrill
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**\$50,000,000 Annual
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t offer Possibility of
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d with a permanent finish.
tator — Noble & Wood,
N. Y.)

(on inside back cover)

information on prod-
ht, specify CP A5720
information request
ween pages 2-3.

**PFAUDLER STAINLESS
STEEL EQUIPMENT IS
STANDARDIZED!**

**Avoids special engineering
... saves time and money.
If your problem involves cus-
tom-built equipment, Pfaudler
designs to your requirements**

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CONDENSER**

**STANDARD
RECEIVER**

design procedure which has met a majority of process requirements for standard Pfaudler glass lined steel equipment, is now available in stainless steel. You may select *completely standardized* mixers, kettles, stills, reactors or receivers in capacities from 5 to 500 gallons to meet specific needs economically. To go with these, Pfaudler recently added a wide range of stainless steel tubular heat exchangers. So, if stainless steel is indicated, check these lines now!

These standard designs avoid special engineering. Each complete unit is fully identified and defined by a model number, with a consequent saving in time and cost!

In addition to design standardization, these units are available in several alternate types of stainless steel, mill finish or polished, and heat treated, if required.

Note these standard equipment features . . .

1. Top-head openings are adequate in number and size to meet the majority of operating requirements.
2. Agitators are available in alternative types to meet a wide range of operations, all the way from simple blending to gas absorption and emulsification.
3. Pfaudler spiral bevel gear drives of rugged construction accompany these agitators.

4. Stainless steel lined vessels are so built that there is no contact of carbon steel with stainless steel liners. Metal dilution cannot occur. Liner corrosion is eliminated.

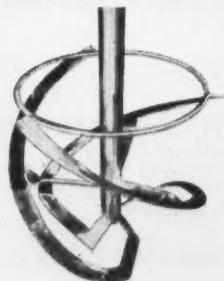
If, for any reason, standard equipment cannot be used, Pfaudler custom-built designs are sure to qualify. Regardless of what type you need, Pfaudler's fabricating know-how assures you of equipment that meets performance requirements.

Undivided responsibility for the complete job is assumed by Pfaudler, whether glass lined steel, stainless steel or other alloys are specified. How can we help you?

CUSTOM-BUILT STAINLESS STEEL



Left: One of the two 6,000 gallon stainless steel formaldehyde storage tanks used in plastics plant. Below: A special Pfaudler designed spiral agitator for mixing alginic acid, typical of the custom-built equipment Pfaudler fabricates.



Pfaudler



THE PFAUDLER CO., ROCHESTER 4, NEW YORK
ENGINEERS AND FABRICATORS OF CORROSION RESISTANT PROCESS EQUIPMENT

Spray Drying

*can now be adapted
to numerous*

CHEMICAL PROCESSES

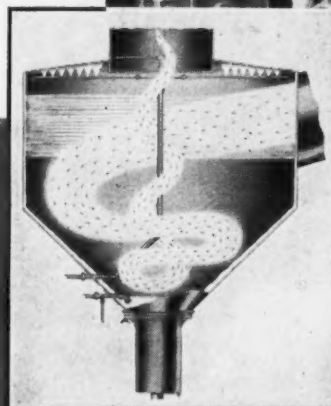
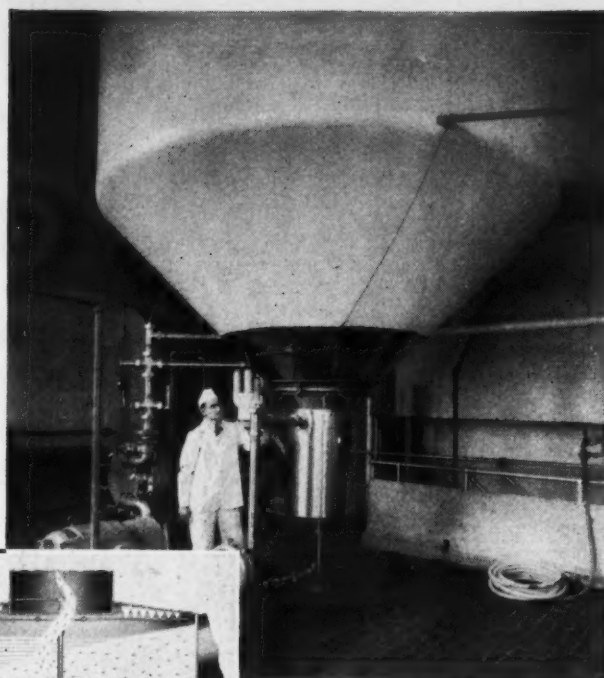
Brings thermal efficiency, product uniformity, high solubility, protection to heat-sensitive materials.

Swenson scores another FIRST in service to the process industries by bringing the advantages of spray drying to a wide variety of chemicals.

Swenson Gray-Jensen Spray Dryers are extensively used in the drying of milk, milk products, eggs, yeast, pectin, juices, and extracts. They have been especially successful from the standpoint of economical operation, product purity, and full recovery of solids.

Now Swenson engineers are adapting the Gray-Jensen process to chemical applications. Such products as zinc sulphate, manganese sulfate, pentaerythritol, starch, cascara, and distillery slop are now being spray dried successfully with indications that equal benefits may be obtained in the similar handling of many other materials.

Spray drying converts solutions to solids in a single pass, producing uniform spherical



Diagrammatic view of the Liquid Collector showing how entrained powder is recaptured and dissolved as the exhaust air from the drying chamber absorbs moisture to near saturation.

particles that are readily soluble... require no crushing or sifting. The low temperatures used (evaporation at or near the wet bulb temperature) avoid thermal decomposition or deterioration of heat-sensitive materials.

The Swenson Gray-Jensen Spray Dryer employs a Liquid Collector, eliminating the use of cloth bags or screens and recovering substantially 100% of the chemical values from the original solution. Swenson engineers will gladly discuss the feasibility of spray drying your materials.

SWENSON EVAPORATOR CO.
DIVISION OF WHITING CORPORATION
SPRAY DRYER DEPARTMENT, 211-L N. La Salle St., Chicago 1, Ill.

CHEMICAL PREVIEW

Edited for Production and Laboratory
Men in the Chemical Process Industries

VOL. 9 NOVEMBER-DECEMBER, 1946 NO. 6

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When inquiring specify CP A5721 . . . see information request blank, pgs. 2-3

The Cover

Infinitely close control is observed in the production of streptomycin as pictured in the cover illustration. Organisms are put through repeated stages of growth in which they multiply millions of times. See page 56.

How To Get More Product Information

To make it convenient for readers to locate information in **CHEMICAL PREVIEW** there is . . . on pages 132 and 133 . . . a complete directory of all products that are featured in editorial articles or described in the advertisements in this issue; On page 134 you will find a list of the advertisers whose products are described in this issue; And to make it easy for you to secure additional information quickly there is a handy request slip inserted between pages 2 and 3.

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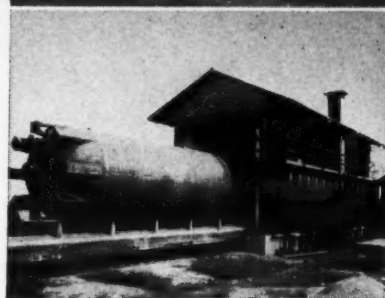
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If it meets their requirements, they will introduce it to the chemical processing industries through the editorial pages of **CHEMICAL PREVIEW**. More than 25,000 copies of this publication are effectively distributed through the chemical processing industries.

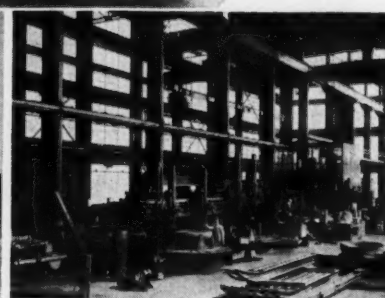
This service costs you nothing and there is no obligation. Write — The Editors, **CHEMICAL PREVIEW**, 737 North Michigan Avenue, Chicago 11, Illinois.



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Annealing Capacity for the Largest Vessels.



Extensive Boiler and Machine Shop Facilities.



Modern Equipment and Welders Qualified to Meet Various Code Requirements.

For more than 37 years Devine engineers have been accumulating a rich and extensive background of experience in the design and construction of process equipment. Today that experience provides an endless source of valuable information and data on which Devine engineers are constantly drawing for the design of today's modern equipment for the chemical and oil-refining industries.

Devine towers, pressure vessels, dryers, heat exchangers, impregnators and similar

equipment are built by expert fabricators in one of America's most up-to-date plants. Housed in spacious, well-lighted buildings, the plant includes completely-equipped machine shop, boiler shop, annealing ovens, and a modern X-ray testing laboratory for the application of ASME and API-ASME codes.

Devine facilities are at your service whether for the designing of equipment to fit special needs, or the fabricating of units from your own blueprints. A letter or telegram will bring a Devine representative.



**J. P. DEVINE DIVISION
H. K. PORTER COMPANY, Inc.**

PITTSBURGH 23, PENNSYLVANIA

When inquiring specify CP A5722 . . . see information request blank, pgs. 2-3

★ Blast Cleaner Vacuum System KEEPS ABRASIVE FROM OUTER AIR

★
Provides for efficient removal of corrosion, paint, other deposits from concrete, metal without hazard to surrounding area

PROBLEM — The thoroughness of blast cleaning as applied to metals, concrete and other hard surfaces has not been utilized in many instances because it involved interruption to vital plant operations, employee hazards, possible damage to equipment and products. Where such abrasive cleaning or refinishing is attempted removal of machinery or at least the most complete covering is generally considered imperative.

Solution — A recently perfected blast cleaning device embodies a vacuum return system which permits no abrasive or other particles to escape into the open. It operates much in the fashion of a household vacuum cleaner. It may be used without special precautions or preparations. Workers operating it need not wear goggles, masks or protective clothing. Production or any plant or employee activities where the abrasive cleaning or refinishing is to be performed are not interrupted. The vacuum pick-up system is so positive in action that sensitive equipment, fragile products or other objects are not damaged. Many types of abrasives may be used. Spent abrasive is reclaimed and may be reused as long as it remains effective.

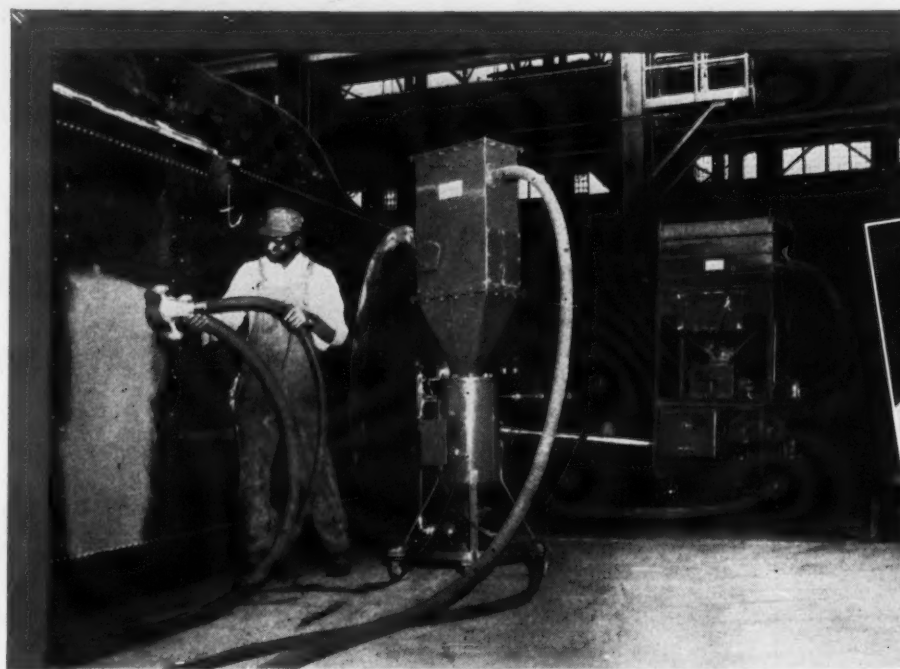
Operation of the "Vacu-Blaster" is almost entirely automatic. The blast is controlled by a switch at the gun through which the abrasive blast is directed and through which grit and dust are picked up. The vacuum system operates continuously returning grit and refuse to the reclaiming tank, where reusable grit is returned to the blasting system while dust and refuse are shunted off to a dust collector. Reclaimed abrasive is automatically dumped into the grit supply tank at the close of each operating cycle. At the same time, the blasting assembly is automatically flushed with clean air to prevent possible clogging. Loading of fresh abrasive into the system is easily accomplished by vacuum. The grit is picked up from a container through the blasting gun.

Results — No abrasive or other particles reach the surrounding areas. Hazards to employees operating the device and working in the vicinity eliminated. Removal of machinery and products unnecessary.

VACU-BLAST CO., INC., Dept. CP, 1054 Broadway, Burlingame, Calif.

When inquiring specify CP A5723 — see handy form pages 2-3

Page 6



Blast assembly and reclaim tanks with hose lines and blasting gun Vacuum-Blast cleaning in locomotive works

New Solutions



Recovery Process Avoids Dust in Producing Good Soft Burned Lime

Equipment resists slag conditions caused by impurities encountered in recalcination of precipitate lime

Problem — Recalcining lime mud (calcium carbonate precipitated from chemical use) provides economies where the chemical combines of the spent lime lends itself to reburning. The calcination of lime requires a furnace which is durable for high temperature operation combined with the ability to resist and prevent slag conditions caused by certain impurities which sometime follow recalcination of precipitate lime. Also the elimination of lime dust is a factor in recalcination of precipitate lime due to the damage which might be caused by any extensive discharge of quicklime to the atmosphere as well as the loss of the valuable product. Due to the fineness of such material it is almost impossible to reclaim all of the fines from suspension once they have been picked up by gas flow. Efficient production of good soft burned lime together with the elimination of lime dust is the goal of processors in this field.

Solution — A calcining process has been especially de-

signed for the recovery of lime from calcium carbonate sludges such as are precipitated with some chemical processes used in water softening plants, paper pulp plants or beet sugar manufacturing. A general arrangement of the calcining process is shown in the accompanying drawing. This set-up includes the drying of the lime cake supplied for treatment. The equipment consists of a multiple hearth dryer and pre-heater, followed by a pulverizer in combination with one to four calcining units operating in multiple. The prime feature of the furnace provides for complete calcination on a single hearth by continuous stirring or agitation of material bed under a uniform heat of direct fire. The heat contained in the exhaust gases of the calcining hearth is carried to the multiple hearth dryer and preheater, and flows counter-currently against the movement of material being treated to obtain the maximum heat transfer before passing off at a temperature near 350° F. A number of lightly fired burners supplying heat in the calcining hearth provides a most uniform heat of direct flame radiation to the material bed. This method is highly effective in producing a uniform soft burned lime. The multiple hearth furnace dries lime mud or lime cake and preheats the calcium carbonate to 1400° F. — 1600° F.

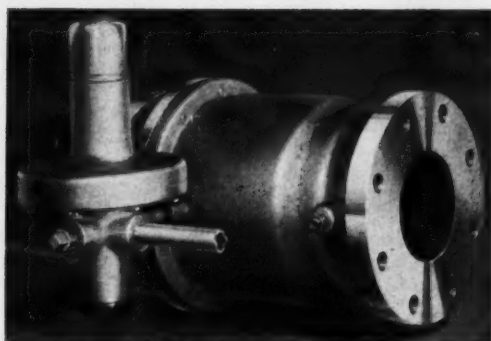
CHEMICAL PREVIEW

MAINTAINING A FIXED Fluid Level.

...6

MILES AWAY!

One of the many outstanding Grove Back Pressure installations is illustrated at right. In this application the Grove Flexflo Back Pressure Regulator is maintaining a constant head on an elevated 6-mile waste water line—automatically controlling the discharge of hot salt water. These units are especially suited for handling highly corrosive, erosive and hazardous fluids with no possibility of seepage or leakage. Positive bubble-tight shutoff is assured.

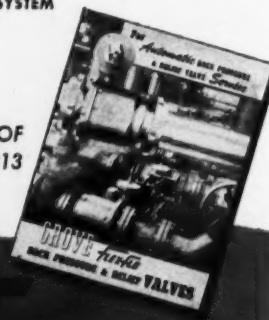


Grove Flexflo Back Pressure Valves are available in a full range of sizes for high and low pressure service.



- ★ POSITIVE BUBBLE TIGHT SHUTOFF
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New Solutions

Pumps Proportion Chemical Feeds 1/8 to 1380 Gallons per Hour

Operate against pressures as high as 20,000 psi;
used in chemical, pharmaceutical, petroleum fields

PROBLEM — The success of many processing operations depends upon accurate chemical feeding. Highly accurate and constant proportioning is required in such applications as pH control and in the manufacture of chemicals, pharmaceuticals, soaps, foods, wood pulp and in petroleum refining. Continuous processing, rather than batch processing, is desired in many industries, with reductions in operating time, costs and also improved product quality.

Solution — A wide variety of chemical feeding operations are served by pumps which function as controlled volume metering units designed to meter and pump practically any liquid in volumes as low as one pint per hour to as high as 23 gallons per minute per pump side and against pressures as high as 20,000 lbs. per sq. in. These pumps find many applications as components of chemical feed systems. Variation in the discharge pressure has no appreciable effect on the quantity delivered by a controlled volume pump. The capacity is directly proportional to the speed of the operation because of material displacement. A positive control of speed results in the direct control of the exact volume delivered by the pumps. The positive speed regulation is effected by a Thy-mo-trol electronic system. A normal speed range of 10% to 100%, accurately and directly proportionate to setting of a speed regulating potentiometer in the Thy-mo-trol circuit is usually adequate for most applications. Ranges to as high as 1 to 100% are possible for special applications. Speed will hold constant within 1% and will not vary with any change in load.

For automatic control, the potentiometer for speed regulation is mounted in the meter and the speed setting controlled by the meter. The system is furnished by a hand-automatic selector switch so that the motor speed and pump delivery may be either regulated by the hand potentiometer or controlled automatically by the meter. Accurate proportioning or ratio control is obtained by this system. Some flow meter manufacturers have adopted their meters to this system. With a change in meter main-line-flow, an immediate proportional change in chemical flow delivered by the controlled volume pump is achieved.

In automatic systems for pH, the meter and controller may function to either change the motor speed as described, or to automatically change the length of the stroke of the pump. Control of this stroke length is normally preferred for this type of system. Other applications of these chemical feed systems can be made using other metered variables including temperature, pressure, conductivity and liquid level, or any other metered variable that can be measured to actuate either pump speed through an electronic circuit or a motorized stroke adjustment. A control panel may be located at the pumping point or at any convenient location.

Other applications of these automatic chemical feed systems can be made for water treatment providing exact addition of such chemicals as alum, soda, ash, calgon or other phosphates, caustic soda, lime, sulphuric acid, activated carbon and hypochlorites. When applied to boiler feed waters for proportional addition of sodium sulfite, phosphates, organics, and other boiler water corrective chemicals, proper treatment is assured without introduction

When inquiring specify CP A5726 . . . see information request blank, pgs. 2-3

New Solutions

of excess solids at time of low loads, or undertreatment at time of peak loads.

An example of the advantages of this type of controlled feeding is found in the continuous manufacture of Phthalic Anhydride. This has been made by batch process. The heavy demand for this product prompted the investigation of continuous processing. The problem of controlling the



View of chemical feed system used in continuous manufacture of phthalic anhydride

flow rate ratio between air and naphthalene into a vaporizer as this ratio must be maintained on a definite weighted rate basis between the air and liquid naphthalene. This ratio must be properly maintained or an explosion may result. Air is delivered by a reciprocating compressor to a receiver. The air, heated by steam, is controlled to a definite temperature. The air flow is measured by a pressure compensated flow meter reading in pounds of air. This meter has two control circuits. One of these meters controls the flow at a set rate and the other regulates the speed of the controlled volume pump through the Thy-mo-trol circuit. The speed of this pump will compensate for any slight flow deviations if the first control is used; or if this first control is not used will then control the motor speed direct with the weighted rate of air flow through the orifice as measured by the meter. The ratio of molten naphthalene to air can be manually adjusted by changing the length of the stroke on the controlled volume pump. Four duplex pumps were furnished for this service, each with its own Thy-mo-trol for operation from a meter. Each pump can handle a maximum of 94 gallons per hour of molten naphthalene at a temperature of approximately 110 degrees C. The valve and displacement chambers of the pump are steam jacketed for this service. The motors on these pumps are explosion proof types and the Thy-mo-trol panel is located in another room in a non-hazardous area. The illustration shows one side of this installation. (Additional information concerning the application of controlled volume chemical pumps and automatic chemical feed systems is available on request.) MILTON ROY CO., Dept. CP, 1300 Mermaid Ave., Philadelphia 18, Pa.

When inquiring specify CP A5727 — see handy form pages 2-3

Process Electroplates Silver to Mirror Smooth Finish

Current opposite in direction to that employed for ordinary plating removes high spots

Problem — Silver tableware manufacturers and other processors utilizing silver have sought improved methods of

polishing that would provide better quality in finish, especially at sharp edges where mechanical buffing usually removes too much silver. Another consideration has been more efficient polishing in deep recesses which are inaccessible to the buffing wheel.

Solution — Electropolishing now is being used to polish plated silverware by Oneida, Ltd., where research on this subject has been carried on extensively since 1939. Electropolishing in general is a relatively new finishing procedure developed rapidly during recent years. The most important application thus far has been in the polishing of stainless steel. Several large installations with strong acidic baths have been operating for several years. Aluminum, zinc, copper, brass, nickel, tin, cobalt, nickel-silver and various iron alloys can also be polished in acid baths. These baths usually require a rather high current density, which in commercial practice means expensive equipment. The acid is used up in the process.

The new silver process differs from earlier methods for other metals in its simplicity and economy. Its alkaline cyanide bath is much the same as for silver plating and does not require heating. Current density is in the low plating range, and plants may thus use their regular equipment. Since electrical efficiencies are almost 100%, power costs are low, and silver is continually recovered from the bath, which thus has long life. The process can polish platedware on the same racks on which it is plated and is well suited to automatic operation. Time required for polishing depends on the condition of the surface, but amounts to about five to twenty seconds. Only a small percent of the silver is removed, much less than with mechanical buffing.

This development was suggested by observation at Oneida that some electrodes in a silver bath occasionally appear to be polished. This has been known for some time, but no commercial applications had been possible because of poor reproductibility. Metals other than silver, for example cadmium, may be similarly polished using the new technique, but commercial application requires further development. (As a result of possibilities indicated by these investigations sponsored a project under its direction at Arthur D. Little, Inc. A patent is to be issued to S. E. Eaton of Arthur D. Little Inc.)

Results — Replaces manual or mechanical buffing. Produces a mirror smooth surface. Substantial savings in manpower. Time required for polishing only five to twenty seconds.

ARTHUR D. LITTLE, INC., Dept. CP, 30 Memorial Drive, Cambridge 42, Mass.

When inquiring specify CP A5728 — see handy form pages 2-3

Explains Feed Water Control for Biggest Forced Circulation Boiler

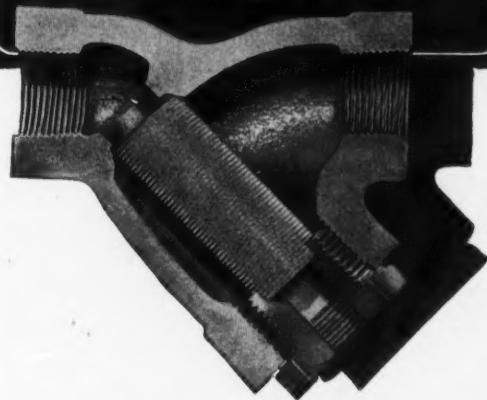
An illustrated, 16 page pamphlet describes feed water control system for the first controlled-forced-circulation boiler to be installed in America, at Somerset Station of Montaup Electric Company, Fall River, Mass. Unit is world's largest, operating at 1825 psi and 960 degrees F at superheater outlet.

Diagrams and photographs illustrate working parts and overall system. Three sets of charts show base load, regulating load and emergency conditions covering boiler meter, fluid meter and recorder. Text discusses operating conditions, feed water control system, pump and excess pressure control, emergency operation and feed water regulators. Ask for Bulletin 447.

NORTHERN EQUIPMENT COMPANY, Dept. CP, 1945 Grove Drive, Erie 6, Pa.

When inquiring specify CP A5729 — see handy form pages 2-3

It says "STOP" to Solids— "GO" to Fluids



A BETTER Strainer to "police your pipelines"

• **FIRST—The Screen**, a high-grade woven Monel wire basket that catches solids—lets condensate, oil or other fluids flow freely.

• **SECOND—Finish**. Cadmium plated for protection against corrosion and for better appearance.

• **THIRD—Easily Cleaned**. Blow-off bushing made for easy removal. Bushing and Screen come out together. Screen automatically aligns on reassembly.

• **THOUSANDS IN SERVICE**—Sold by over 100 Mill Supply Houses.

6 sizes from ½" to 2" for pressures up to 600 lb. Reasonably priced. See your supply house or write for Bulletin S-201

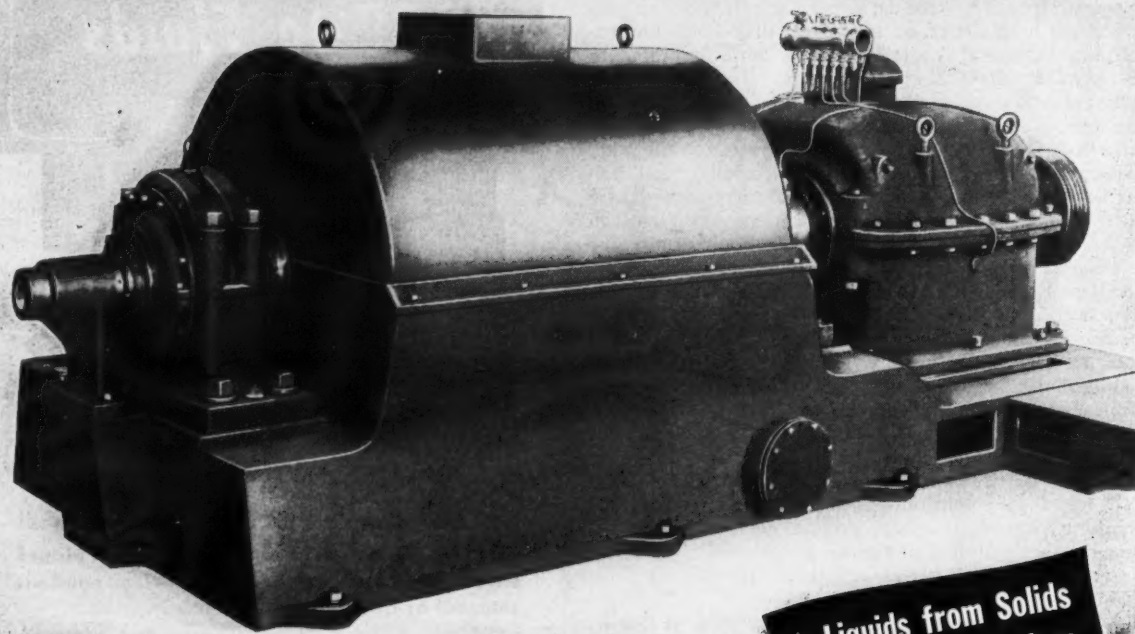
YARNALL-WARING COMPANY
125 MERMAID AVENUE • PHILADELPHIA 18, PA.



YARWAY STRAINERS

When inquiring specify CP A5730 — see handy form pages 2-3

CME Continuous CENTRIFUGE



For Fast, Continuous Separation

The new CME Continuous Centrifuge sets new standards in centrifugal filtration. It extracts solids from liquids and separates immiscible liquids of unequal specific gravity at lower cost than with any other type equipment. There are no filter elements to renew or service. Operation is continuous, uninterrupted, and automatic. The unit is entirely self-contained and requires little floor space.

CME Continuous Centrifuges are available in a variety of sizes and models to meet different requirements. Granular, amorphous, and crystalline materials such as caustic recoveries, salts from brine solutions,

Continuous

- ★ Dewatering
- ★ Classifying
- ★ Fractionating
- ★ Degritting
- ★ Thickening
- ★ Extracting

sugars, coal, scrap rubber, ground cork, cut sponge, and pulps are separated and washed at from 2 to 15 tons per hour. For separating fines or mixed sizes fractionated to particle size or specific gravity, for refining or degrading clays or non-metallics, and for treating slimes, crystalline and fibrous matter, metal salts, fish reductions, and fine chemicals models of 1 to 6 tons per hour capacity are available.

CME Continuous Centrifuges are designed and built by pioneers in this modern, efficient, low cost type of filtration. Our engineering analysis of your problem will not obligate you. Send for full details.

★ Liquids from Solids
★ Immiscible Solutions

CENTRIFUGE MECHANICAL EQUIPMENT, Inc., N. J.

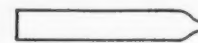
Pioneers and Specialists in Centrifugal Separation 47 River Street, Hoboken, N. J.

When inquiring specify CP A5731 . . . see information request blank, pgs. 2-3

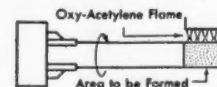
New Solutions

Flame Spinning Closes Chemical Converter Tubes in 35 Seconds

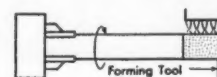
Method adaptable to production of other chemical equipment and in refrigeration and air conditioning applications



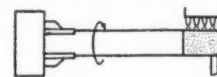
A part like this is to be made from stock tubing.



First, the tubing is fastened in a machine and spun rapidly while the oxy-acetylene flames heat the area to be formed.



Second, the forming tool is applied to the heated area of the spinning tube.



Third, forming is continued until the desired shape is reached—a matter of seconds.

Problem — Processors and fabricators concerned with the shaping of tubes and tubular products encounter operations where the size and wall thickness of the tubing is so great that cold forming can not be used. For example, in the production of closed tubes for chemical converters, greater speed in closing end of the tube was sought as well as greatest possible strength in the end section. Tubes were to test at 1000 psi which is well above working pressure.

Solution — Developed through

war time necessity an oxy-acetylene flame spinning process for shaping tubes and tubular products adapts itself to mass production methods. In many instances it is being used instead of cold-forming methods. Fundamentally, the process consists of heating with an oxy-acetylene flame or flames that part of the tube which is to be shaped. During the heating the tube is rotated rapidly. As the forming temperature is reached, a tool is forced against the end of the tube, shaping it to the desired form. This forming heat is reached in a few seconds after the flames are applied to the work. The oxyacetylene flames usually continue heating the work, keeping it pliable during the shaping action. In flame spinning converter tubes, the tubes are cut to size from 3 in.—12 gauge mild steel tube stock. In this set-up for closing ends of the tubes, the blowpipe is fitted with a 30 flame rhomboid heating head, although only 9 orifices are needed for this job. A forming tool of flat-plate design is used. When the tube end is sufficiently heated to permit forming, the flame head was raised, thus automatically shutting off the heating flame. Closing of the tube end is then begun. In closing the end of the tube completely, as in this operation, a secondary heating of the tube edges is applied just before the end is sealed. This heating prevents the trapping of impurities and gas pockets in the center where the metal is fused together. Machine requirements for a flame spinning layout include a lathe or similar heavy base machine incorporating a rotary member with a chuck, forming tools and support, oxyacetylene heating heads, control equipment and a timer. Motor required for rotative power is from 3-10 HP depending on size of work. The method is being used for automotive, chemical, refrigerating, air-conditioning and other industries.

Results — Flame spinning is now applied to tubing from 1/2 to 4 inches, but there appears to be no limit to the

CHEMICAL PREVIEW

New Solutions

maximum or minimum diameter of tubing that may be spun. However, ratio of diameter to wall thickness should be definitely under 50 to 1. In the converter application, the complete forming operation requires only 35 seconds — a fraction of the time needed in the cold forming method previously used. Test specimens show that the wall at the closed end of the tube is actually thicker and stronger than the side walls. Etched specimens reveal a very satisfactory crystalline structure in work area. Tubes test at 100 psi. (Additional information on request.)

LINDE AIR PRODUCTS CO., Dept. CP, 30 E. 42nd St., New York, N. Y.

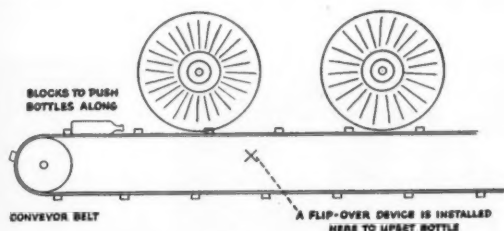
When inquiring specify CP A5732 — see handy form pages 2-3

Eliminating Hand Cleaning of Bottles During Packaging

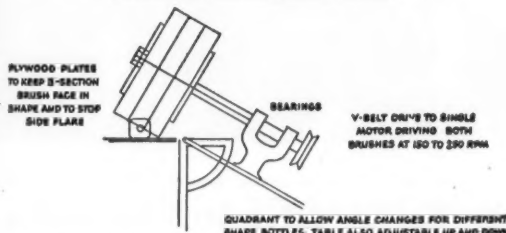
Power brush-conveyor assembly removes dust, foreign materials; is adjustable to bottle size

Problem — Eliminating hand cleaning of bottles during the packaging of pharmaceutical and other products. An example is offered in the case of pharmaceutical manufacturer in aspirin bottling operations. Hand cleaning had been the means of removing dust and other foreign matter on bottles during the filling operation and prior to packing.

Solution — Two 3-section-14 inch brushing wheels are mounted on a conveyor belt (Figure 1). These have a 4 1/4 inch inside diameter and are mounted to a V-belt



Installation of 14-in. power brushes on conveyor belt cleans bottles for pharmaceutical products



Side view of 3-section wheel mounted on quadrant which permits adjustment to bottle shape; V-belt drive turns wheel

drive (Figure 2), operating at between 150 and 250 revolutions per minute. A quadrant allows for angle changes for different bottle shapes and the installation is mounted on a table which is adjustable up and down. Plywood face plates keep the brush face in shape and stop flare. The conveyor belt is equipped with wooden blocks to push the bottle along and a flip-over mechanism is installed between the two brushing setups to upset the bottle midway through the brush cleaning operation.

THE OSBORN MFG. CO., Dept. CP, 5401 Hamilton Avenue, Cleveland, Ohio.

When inquiring specify CP A5733 — see handy form pages 2-3

NOVEMBER-DECEMBER, 1946



Let an A.T.C. Specialist do the same for you!



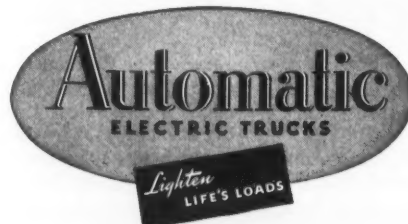
Yes, such savings are possible. An A.T.C. Specialist will show you the record — give you proof that Automatic Fork Trucks bring business real profits ... the dollar profits that 55% material handling savings represent.

These brawny giants of electric power have so many money-saving, energy-saving applications in your plant. By unit load pallet and skid principle, they move materials into, through and out of your

plant with easy efficiency—spare your workers gruelling work, make money for you where it formerly was costing you money.

No material or product is too cumbersome to lift, move or stack. You can store your products ceiling high. One man does it, where three or four men hand stack only half as high. You add storage space, release labor for more productive, pleasant work. Product damage is cut down, accidents lessened.

Give your business this chance to turn a fixed overhead into a fixed profit, while you lighten labor's load. Let an A.T.C. Material Handling Specialist survey your material handling. Mail the coupon.



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DIV. OF THE YALE & TOWNE MFG. CO.

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Please mail me, without cost or obligation, complete facts about AUTOMATIC FORK TRUCKS.

() Have an A.T.C. Material Handling Specialist call.

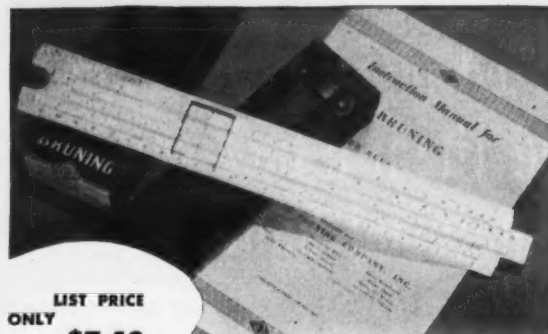
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By.....Position.....

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When inquiring specify CP A5734 ... see information request blank, pgs. 2-3



LIST PRICE
ONLY
\$7.50

New BRUNING 10-Inch Slide Rule

Unaffected by Atmospheric Changes

Made completely of plastic material, this new Bruning 10-inch Precision Slide Rule is unaffected by changes in atmospheric conditions — retains its dimensional stability and operates smoothly and accurately always. The CI scale shows numerals and graduations in red to provide easier reading. A, B, CI, C, D, K, S, L and T scales provide widest possible range of service. The beveled edges of the rule are graduated in inches and centimeters, while the glass indicator is enclosed in a stainless steel frame that holds it firmly in place. Four screws on the back of the rule provide easy adjustment of tension and slide. The rule is furnished complete with sturdy protecting case and book of simple instructions. Write Charles Bruning Company, Inc., 4706-18 Montrose Avenue, Chicago 41, Illinois.

BRUNING Since 1897

When inquiring specify CP A5735 — see handy form pages 2-3



That is Why Sales of SPERRY FILTER BASES HAVE MOUNTED STEADILY

For more than a half century Sperry has specialized in industrial filtration. Designing and developing, for the incredibly diversified types of filtration demanded by modern industry, an enormous variety of filter papers, filter cloths, filter bases of glass, wool, asbestos, vinyon, rubber and woven metals... stainless steel, monel and other materials... as well as special bases to meet unusual requirements.

During those 50 years the demand for Sperry Filter Bases has steadily mounted... indisputable proof of "customer satisfaction."

Sperry is equipped to handle, promptly and efficiently, not only all orders for filter bases, but to analyze your requirements and suggest the exactly right filter bases for your particular operation. Write today... give details about the presses you use and their purpose. We will send you our recommended samples of filter bases and our new economy price list... there is no obligation.

Filter Base Division
D. R. SPERRY & COMPANY
Batavia, Illinois

When inquiring specify CP A5736 — see handy form pages 2-3

New Solutions

Stack Fans, Duct Boosters Rid Plants of Fumes, Gases, Dust

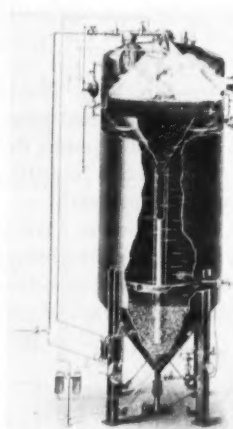
Many industrial uses are found for duct boosters and stack fans described in this pamphlet. Health, comfort, safety and higher efficiency of men and machines are a few factors which make these fixtures a necessity in bakeries, garages, laundries, chemical and metallurgical plants, and similar locations. 32 illustrations and diagrams. Ducts, stacks, industrial fans and axial blowers are included. Text describes two types of duct boosters, for low and high pressure use. One moves large quantities of air in short ducts against smaller static pressure; another moves small or large quantities of air against high static resistance in narrow, long or intricate duct systems. Applications: remove acid-filled gases from chemical or metallurgical tanks, galvanizing pots; inflammable vapor from paint spray booths; high temperature gases from ovens and heat treating furnaces. Air or water cooled. Construction of shell, motor receptacle, propellers and motors explained. Complete specifications for capacities and dimensions listed in tables covering high and low pressure boosters and booster fans. Stack fans are described in duplicate style. Fans boost stack capacity, cut stack cost by permitting use of shorter stacks, perform other useful functions. Bulletin 109.

INTERNATIONAL ENGINEERING, Inc., Dept. CP, Dayton, O.

When inquiring specify CP A5737 — see handy form pages 2-3

Water Softener With Automatic Desludging Valve Saves Chemicals

Offered in four models for use with every type of steam generator; intervals between blowing off from one to eight hours



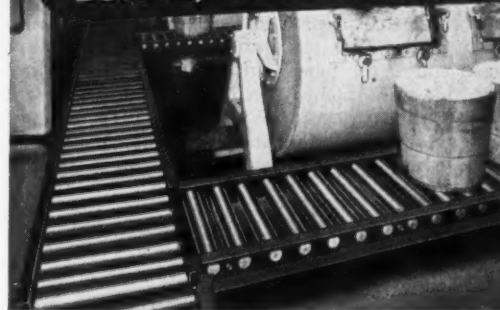
Hot process softener embodies sludge blanket design

suspended sludge forms a bed which acts as a filter screen for fine particles. This bed, coupled with the slow rate of upward flow throughout the full cross section of the settling tank, gives an effluent lower in turbidity. Low turbidity is important in the effluent in the first stage because much of the turbidity or suspended calcium carbonate consumes phosphate in the second stage. In addition to con-

Problem — Numerous water softening installations while performing adequately for average requirements nevertheless impose a rather heavy load on filters because of the turbidity in effluent and are inclined to consume quantities of reagents, chemicals, etc. Low turbidity is an especially important factor when water is softened in two stages. Also determining when suspended matter dictates desludging and performing this operation have required personal check of operators.

Solution — A recently introduced hot process water softener, incorporates a sludge blanket design. In the tank,

* BEST WAY TO MOVE BUTTER, BEER OR BOLTS



BEFORE this A-F completely coordinated conveyor system was installed in the food plant shown above, a study of all operating conditions was made. In this instance, a combination of A-F gravity roller conveyors and A-F live roller conveyors was planned, engineered and installed. What type of system will solve your problems best? Write today.



THE ALVEY-FERGUSON COMPANY
18 DISNEY ST. CINCINNATI 9, OHIO
(Offices in Principal Cities)



When inquiring specify CP A5738 — see handy form pages 2-3



Recording pH of paper stock, Mosinee Paper Mills Co.

PH INSTRUMENTS For Most Needs

As pH problems in plant and laboratory grow more important the Micromax family of instruments for recording and control is increasingly depended on to meet requirements with accuracy and dependability.

For the particular instrument which will best solve your pH problem, we can provide the proper range; the required type of glass electrode; equipment for recording or control, or both. Either an L&N engineer, or our Catalog N-96(1), will supply further information on request.



LEEDS & NORTHRUP COMPANY, 4905 STENTON AVE., PHILA. 44, PA.

LEEDS & NORTHRUP

MEASURING INSTRUMENTS • TELEMETERS • AUTOMATIC CONTROLS • HEAT-TREATING FURNACES

Jrl. Ad N-96 (5b)

When inquiring specify CP A5739 — see handy form pages 2-3

New Solutions

serving phosphate, the amount of lime required to soften the water is reduced, since unconsumed lime is retained in the blanket until it reacts with water hardness. When the sludge blanket has considerable oxide or hydroxide of magnesium, a higher degree of silica removal is effected than achieved in earlier model softeners. Each particle of silica has an intimate and prolonged contact with the magnesia which removes silica by adsorption. An automatically operated desludging valve controls the depth of the sludge bed. The valve is actuated by an electronic turbidity detector which continuously measures a water sample passing through the bed and between a light source and a photoelectric tube. Intervals between blowing off vary from one to eight hours.

Results — Improved boiler feed water. Savings in phosphate and lime. Lime is not wasted as in some softeners in which unconsumed lime is removed during blow-off with the sludge that has settled on the bottom of the tank. Reduction in frequency of backwashing.

THE PERMUTIT CO., Dept. CP, 330 W. 42nd St., New York, N. Y.

When inquiring specify CP A5740 — see handy form pages 2-3

Ear Plugs Absorb Noise Rather Than Block it; Fit Ear Canal

Keep high frequencies from ear drum but allow wearer to hear conversation, etc.

Problem — Ear-plugs or coverings are among the various aids that have contributed to overcoming industrial noise hazards. Despite widespread recognition of the noise problem keeping noise at or below the "comfort" level is yet to be achieved in many plants. In one survey a third of all absentee workers said their failure to report was due to noise fatigue. In using various ear coverings and plus varying degrees of efficient noise elimination have been encountered. Some plugs of hard or soft rubber and numerous other materials did not satisfactorily block out the sound. Some hard materials transmit the sound and also prevent ventilation of the inner ear.

Solution — A "noise absorbing" ear plug — based on tests and research in war plants embodies an absorbent material sealed inside the ear protector. No attempt is made to "block" the noise but rather to "absorb" it before it reaches the ear drum — just as a wall and ceiling are treated to absorb noise before it can bounce away. These safety ear protectors are particularly effective in absorbing noise in the high frequencies, which are harmful to the nerves and hearings. Lower, slower frequencies are carried through, permitting the wearer to hear conversations almost normally. Because of the extremely soft materials used in making these plugs, the plug molds itself to the ear canal, contributing to comfort, easy insertion and retention in the right position. They are made in several sizes to meet individual requirements. Each pair of "Sepco" ear plugs comes in a three compartment plastic case. The center compartment contains an antiseptic lubricant which aids insertion into the ear canal and comfort in wearing.

Results — The plugs can absorb from 30 to 55 decibels of sound, chiefly in the high frequencies.

INDUSTRIAL PRODUCTS CO., Dept. CP, 2820 North 4th St., Philadelphia 33, Pa.

When inquiring specify CP A5741 — see handy form pages 2-3

Stitch with Steel

**TOY MANUFACTURER
ELIMINATES OVERTIME**

"During rush seasons, we used three men gluing shipping cartons. They worked almost every night making the next day's supply. Now, with Acme Silverstitchers, one man does the job without overtime, and still keeps well ahead of production."

USE THE CLOSURE COMBINATION THAT

SAVES LABOR OF TWO PERSONS

SilverStitch  *SilverStitchers*

BOX STITCHING WIRE

BOX STITCHING MACHINES

- One-piece, continuous length, 5 and 10 pound coils . . . cuts threading time
- Galvanized to resist rust, corrosion
- Always uniform in width and gauge
- Makes stronger, surer closures than other methods . . . unaffected by weather
- Few moving parts . . . vital ones reversible . . . for lower maintenance costs
- Adjustable, single pedal control
- Operate easily, smoothly, quietly
- Heavy duty construction . . . low power consumption . . . for long thrifty service

Sealing Shipping Containers by Stitching is Faster, Stronger and More Economical

ACME STEEL COMPANY

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ATLANTA

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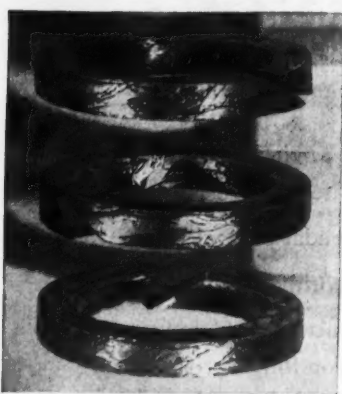
LOS ANGELES 11

When inquiring specify CP A5742 . . . see information request blank, pgs. 2-3

Seals with Bearing-Like Precision



DURAMETALLIC



Precision made rings to your specifications.

The Packing That is Engineered For Your Specific Need....

1. Processed to retain lubrication.
2. Responds readily to gland pressure.
3. Forms a neat fitting metallic bearing.
4. Distributes frictional load over several diagonally wrapped metallic sheets.
5. Provides better sealing, longer runs and less friction than ordinary packing.

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BULLETINS AND FREE
ENGINEERING COUNSEL



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When inquiring specify CP A5743 . . . see information request blank, pgs. 2-3

New Solutions

Booklet on Metal Shapes Offers Short Cut on Tool, Die Costs

Tools and dies are costly. Purchasing agents and designers wishing to avoid this expense will find 18 metal shapes described in a 20-page booklet. They are suitable for range boilers, underground storage tanks, exhaust and ventilating fans and other industrial uses. Complete dimensions included with blue prints. Hemispheres for various purposes are available from standard tools. Edges on heavier gauges can be flame beveled on special order. Shape 15 is used extensively in pressure vessel construction made in accordance with code requirements. Shape 16 is a semi-ellipsoidal head design for pressure requirements; depth of dish equivalent to one-fourth diameter. Shape 11 was designed for range boilers and can be furnished plain or pierced with integral drawn spuds, untapped. No. 10 is double-dished head construction with true radial dish. No. 9 is also double-dished, or flanged, and is used on underground storage tanks. Has fairly flat surface, and reverse flange makes ideal welding condition. Many other useful shapes. Booklet mailed on application.

THE COMMERCIAL SHEARING AND STAMPING CO.,
Dept. CP, Youngstown, O.

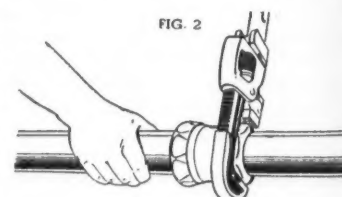
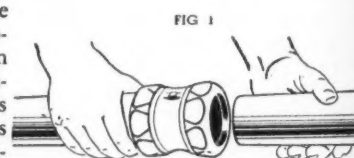
When inquiring specify CP A5744 — see handy form pages 2-3

★

Tight Pipe Joints Quickly Made With "No-Thread" Fittings

*Joints are oil-tight, gas-tight and flexible; for
working pressures up to and over 150 psi*

Problem — The wide variety of piping requirements in the process industries call for means of making joints quickly that are oil-tight, gas-tight, flexible and permanently sealed. Lines must stand up under many kinds of harmful forces, vibration of machinery, contraction and expansion and corrosion. The use of plain end pipe in order to take benefit from the advantages offered is also to be desired, — in speed, strength, salvaging of pipe, especially in cases where installations are temporary, etc.



Joint made with fitting and wrench

Solution — A "no-thread" fitting which is easy to install offers a solution to such problems. It consists of a malleable iron sleeve — the body of the fitting — which encloses the two pipe ends. At each end of the body are nuts, which when tightened, compress a resilient rubber compound gasket around the end of each pipe. The self-contained fitting comes all assembled and does not have to be taken apart. It is merely necessary to loosen the end nuts and slip in the plain-end pipe. The nuts are then tightened with a few turns of an ordinary wrench and in less than a minute the joint is completed. (See Fig. 1 and Fig. 2) This "no-thread" fitting is recommended for use

CHEMICAL PREVIEW

New Solutions

with working pressures up to and including 150 pounds per square inch. On properly anchored or buried lines it withstands pressures much greater. The fitting works well on either plain or threaded pipe. An example of the use of the fitting is found in connecting drain pipe from a new ice-water cooler system into another pipe. The conventional method involving removal of pipe from inlet tee, cutting threads, cutting lengths of pipe etc. required 55 minutes. With the "no-thread" fitting all that was required was to cut out 2 inches of the pipe to which drain pipe was to be connected with saw, spring pipe up, slip on "no-thread" tee, insert pipe ends and tighten nuts. The job was completed in 5 minutes. "No-thread" fittings are available in every purpose — regular coupling, long coupling, ells, etc. A sixteen page catalog (453RS) fully describes these Dresser "No-Thread" couplings — Style 65. It lists specifications of the various types in their various sizes — the range being from $\frac{3}{8}$ " to 2". (A bolted steel style 38 coupling will serve requirements larger than 2"). A table out liquids and gases, including acetic acid, alcohol, brine, butane, steam, water, etc. Copies are available on request.

DRESSER MFG. CO., Dept. CP, Bradford, Penna.

When inquiring specify CP A5745 — see handy form pages 2-3

★

Portable Silo Batching Storage Plant Features Large Capacity

No crane required for rapid assembly, dismantling; handles cement, chemicals

Problem — Numerous bulk material handling and storage operations require portable equipment that provides entirely adequate storage capacity in addition to rapid, simple erection, ease of convenience in dismantling and transporting to another location. In erection of such handling and batching installations a crane has generally been required and bolt and nut assembly details are involved.

Solution — A new portable twin-silo cement batching plant with storage capacity up to 1600 barrels features exceptional portability. In addition to cement applications the plant may be used for agricultural limestone, asphalt filler, phosphate, chemicals and other relatively fine ground bulk materials. The plant is constructed of all welded units and consists of an all-welded ground level storage silo with an all-welded elevated silo on hinged legs fitted with a cement weigh batcher of 1000 pounds capacity, track screw, enclosed vertical cement bucket elevator with two way discharge gate and spouts to both silos, requiring a minimum of ground area and allowing eight foot six inch clearance under the cement batcher for truck charging. On jobs where maximum storage is not required, the elevated silo on legs, together with the batcher track screw and elevator may be used as a complete unit, without the ground storage silo, thus making it unnecessary. The leg action of the overhead silo is so designed that it can pivot on a base plate mounted in the concrete footing. The pivot can then be utilized to tip the entire leg and silo assembly into place by means of a gin pole and tractor winch. A bin gauge indicates high or low level in the silo. Plants of similar design in capacities of 761, 1044 and 1327 barrels are also offered. Complete details on request.

C. S. JOHNSON CO., Dept. CP, Champaign, Ill.

When inquiring specify CP A5746 — see handy form pages 2-3

NOVEMBER-DECEMBER, 1946



You saw them go out...

These samples of Alcoa Aluminum Alloys, selected to meet corrosive conditions anticipated in a processor's plant, were shipped out early in 1945. After months of exposure, they were returned to Alcoa to tell their own story.

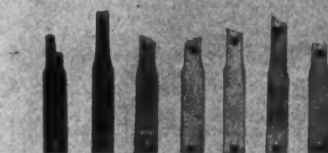
"We treated them rough" when they came back

▶ Test pieces were taken from each sample and checked for tensile strength and depth and character of corrosive attack. The alloy which showed up best won the assignment, and it's now at work in that plant.

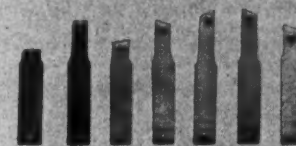
The point is —

Alcoa has a wealth of performance data on aluminum. From these data, we can often make definite recommendations on alloys to use in the equipment you're planning. Sometimes, however, months of testing must precede the selection of a material.

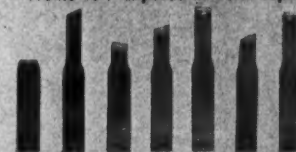
Therefore, if you're planning new equipment, why not ask Alcoa's advice *now* on the metal to make it of? Call the nearby Alcoa office, or write ALUMINUM COMPANY OF AMERICA, 1731 Gulf Building, Pittsburgh 19, Pa.



Frame 1733 Exposed in Sloop Water Tank



Frame 134 Exposed in Germ Separator



Frame 814 Exposed in Gluten Settler



Frame 143 Exposed in SO₂ Tower Tank

ALCOA FIRST IN ALUMINUM

IN EVERY COMMERCIAL FORM



When inquiring specify CP A5747 . . . see information request blank, pgs. 2-3

PATTERSON-KELLEY
Heat Exchangers
AND
Process Equipment

PATTERSON-KELLEY HEAT EXCHANGERS WITH DOUBLE CORROSION RESISTANCE

...THEY'RE FURNISHED WITH DUPLEX TUBING



Duplex Tubing in Patterson-Kelley Heat Exchangers provides maximum corrosion resistance for both inner and outer contacts. From a wide range of metals for inner and outer components of the tubing the best combination may be selected for resisting the two liquids or gases encountered. In contrast

with monometal tubing, the corrosion resistance of neither inner nor outer surface need be sacrificed.

In Duplex Tubing there are no fixed combinations of outer and inner tube components. Practically any combination of corrosion resisting metals can be furnished. That's why these Patterson-Kelley Heat Exchangers give maximum resistance to corrosion for both contact surfaces.

Our engineers will be glad to discuss the application of Duplex Tubing construction for the heat exchangers you need.

Here are a few of the Patterson-Kelley Heat Exchanger applications with Duplex Tubing and the products handled:

Application	Tube Components	Products in Contact
Ammonia Liquor	outer—steel inner—copper	ammonia—liquor treated river water
Formaldehyde	outer—aluminum inner—copper	formaldehyde water
Acetic Acid	outer—aluminum inner—copper	acetic acid water
Hydrocarbon Vapor	outer—arsenical admiralty inner—steel	water hydrocarbon vapor
Plastics	outer—arsenical admiralty inner—aluminum*	water raw plastics
Amine Compound	outer—copper inner—steel	water nitrogen compounds
Soap Solution	outer—steel inner—arsenical admiralty	soap solution water
Beer Cooler	outer—copper inner—steel	beer water
Edible Oils	outer—aluminum inner—arsenical admiralty	food products water
Carbonated Liquid	outer—aluminum inner—copper	carbonated liquid water

*to avoid color contamination



THE PATTERSON-KELLEY

Company, Inc.

120 WARREN STREET, EAST STROUDSBURG, PA.

NEW YORK 17—101 Park Avenue
CHICAGO 4—Railway Exchange Bldg.

PHILADELPHIA 3—1700 Walnut Street
BOSTON 16—96-A Huntington Avenue

Representatives in Principal Cities

New Solutions

Sealed Miniature Thermostat Can Be Molded In Plastics

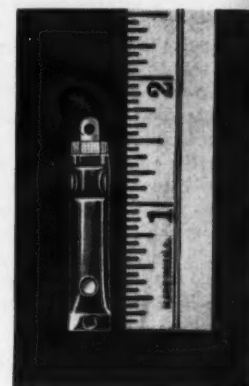
Sealed tubular construction withstands great external pressure

Problems — Appliance installations require thermostats of small size and construction together with protection against dust and moisture. Retention of temperature setting under hard service is also an important factor.

Results — Among miniature thermostats recently introduced to the electrical field is the "Mighty Mite" which is exceptionally small, thin, durable and light weight.

Typical applications include food warmers, percolators, other appliances as well as electric motors, air conditioning, heating systems which use this thermostat as an operating or safety control.

It is pre-set to the customer's specifications and has 1/8 inch silver contacts. The standard model is pre-set for fixed temperatures up to 300 degrees. Other models are available for settings up to 600 degrees. It is possible to mold this thermostat in rubber and various plastics. The copper jacket has high thermal conductivity. By the use of Fiberglas insulation, neither humidity nor freezing weather can affect its consistent operation. The standard model shown is designed for use up to 300 watts, 110 volts, or 150 watts, 200 volts a-c non-inductive load. A feature of construction is the oversize contact points. These are 1/8 inch cold-headed, spun-in-silver contacts.



Miniature thermostat — actual size

MECHANICAL INDUSTRIES PRODUCTION CO.,
Dept. CP, 222 Ash St., Akron, Ohio.

When inquiring specify CP A5749 — see handy form pages 2-3

★

Analyze Fabric Fungicide Content By 4 Simple, Effective Methods

Quantitative determination of rot repellants means fewer rejections for textile makers

Problem — Compounds of copper, zinc and mercury are commonly used as fungicides to rotproof thread, yarns, twine and rope. Simple but detailed methods are needed by which textile and cordage manufacturers and proofers can analyze treated materials to control fungicide content, thereby protecting themselves against rejection of insufficiently mildewproofed fabrics. Common among such metal compounds are copper naphenate, zinc naphenate and the newer phenyl mercurial fungicides. Efficiency of protection varies in proportion to amounts of metal deposited on the fabric. While information on chemical analysis for copper, metal and zinc is readily available, normal textbook methods are either too complicated or else lack direct application to the problem of determining quantities of these metals present in treated fabrics.

Solution — Four simple but effective methods are now

When inquiring specify CP A5748 . . . see information request blank, pgs. 2-3

New Solutions

available to textile and cordage manufacturers and proofers who are confronted with this problem. Thoroughly tested, they are said to provide close chemical control of mildew-proofing operations. Both electrolytic and iodometric methods are offered for determination of copper. (1) In the electrolytic method, after complete digestion of a weighted amount of fabric, copper is plated out on an electrode of platinum from cyanide solution. Percentage Cu equals the gain in weight of electrode divided by the sample weight times 100. (2) For iodometric determination, a digestion is run on a weighed sample and, after filtering through a gooch filter, bromine water is added and an iodometric determination run with 0.1 N sodium thiosulphate. Percentage Cu in fabric equals $M \times 1$ of .1 N sodium thiosulphate solution times .00638 divided by the weight of the sample times 100. (3) To determine mercury, 0.3 to 0.5 grams of treated fabric is shredded and weighed. Glacial acetic acid and 20% sulphuric acid are used for extraction, and after adding 5% ammonium sulphate solution, titration is with 0.001 N ammonium thiocyanate solution. Titration is delicate and taken to a pink color. Percentage Hg. in fabric equals 100 times ml. of .001 ammonium thiocyanate sol. times .000103 divided by weight of the sample. (4) Zinc is determined by weighing an 8 to 10 gram sample of the treated fabric and, after digestion, pH is carefully adjusted between 6 and 7. The zinc in the sample solution is transferred into zinc ammonium phosphate which is filtered, using ashless filter paper. Paper is washed and ignited in a porcelain crucible, cooled and weighed as zinc pyrophosphate. Percentage zinc in fabric equals weight of precipitate times .430 divided by weight of the sample times 100. Mg of zinc metal equals weight of precipitate times .430. Write for bulletin, "The Quantitative Determination of Copper, Zinc, and Mercury in Treated Fibres and Fabrics."

NUODEX PRODUCTS CO., INC., Dept. CP, Elizabeth, F. N. J.

When inquiring specify CP A5750 — see handy form pages 2-3

★

Tachometer Records RPM, FPM, Baking Time or Piece Rate

Pyromaster potentiometer-type indicating and strip-chart recording tachometers which can be calibrated to indicate and record inches per minute, revolutions per minute, minutes baking time, pieces per hour and other units of speed measurement are described in a 12-page bulletin. Accessory equipment sounds alarm when speed exceeds predetermined limits. Typical applications: paper machines, turbines and generators, bread baking ovens, conveyors and blowing engine to blast furnace. Magneto-operated. Complete wiring diagrams, also illustrations of instruments, magnetos and a typical installation. Automatic control is discussed, also general features such as lack of mechanical motion except when speed changes, resistance to vibration and accessibility of parts. No lubrication required. Typical chart records and strip-charts are shown. One illustration shows magneto connected to a roll through a silent chain drive. Pyromaster employs potentiometer method of measuring magneto electromotive force in terms of rotation and travel speed. Standardization of potentiometer circuit, galvanometer unit, power pack and operation are discussed. Pictures and diagrams of magnetos and magneto drives. Request Bulletin S 1400.

THE BRISTOL COMPANY, Dept. CP, Waterbury 91, Conn.

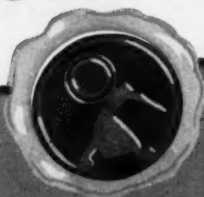
When inquiring specify CP A5751 — see handy form pages 2-3

NOVEMBER-DECEMBER, 1946

Are you getting the GASKET SERVICE

You Ought to Get?

**GASKET
TROUBLE
ISN'T
NECESSARY**



If you take gasket troubles for granted, here's a fact that you should know —

Most of those troubles are unnecessary.

Why? Because you're using a gasket that's *almost* right for its particular application. By getting the gasket that's *exactly* right, you get maximum durability, and 100% joint efficiency.

To eliminate these unnecessary troubles, let the experience of the Goetze research laboratories help you survey your gasket applications. They can recommend the gasket that exactly suits your particular conditions of temperature, pressure or corrosion, and you can probably get the gasket from the regular Goetze line—the only complete line of metal gaskets. If you need something special, Goetze engineers may be able to develop a special gasket for you.

We invite your inquiries—what are your problems? Give us the details on your company letterhead, or get in touch with the nearest Goetze representative.

GOETZE GASKET & PACKING CO., INC.

89 ALLEN AVENUE, NEW BRUNSWICK, NEW JERSEY

Boston	Cleveland	Detroit	Chicago
Cincinnati	San Francisco	Los Angeles	Buffalo
Houston	Philadelphia	Pittsburgh	Denver
New York	New Orleans	St. Louis	Montreal
	Toronto	Syracuse	

Lowell Thomas Speaks On New Gasket Film

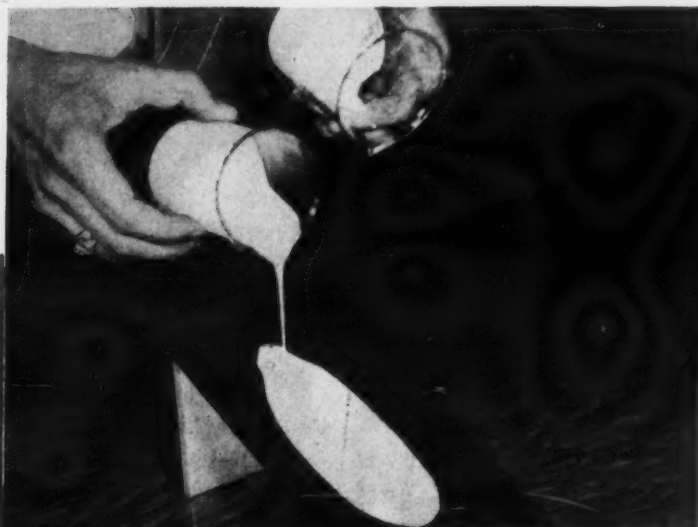
Now available to employee groups, technical societies, engineering schools and other organizations throughout the country, this new 35-minute Kodachrome film, "Only a Gasket," tells why these are the "Biggest little things" in modern industry. Write for full information.

Goetze for GASKETS

"America's Oldest and Largest Industrial Gasket Manufacturer"

When inquiring specify CP A5752 . . . see information request blank, pgs. 2-3

★ Dispersant Aids Leather, Paper and Ceramic Production



New Materials



used as a dispersing agent in aqueous slurries it reduces viscosity without lowering the solids content, or maintains a given viscosity in the presence of added solids. Increased production of perfect ceramic ware is obtained when as little as $\frac{1}{2}$ to 1% of the material is used.

Description — Chemically, the synthetic is known as the sodium salt of a condensed aryl sulfonic acid. By the conventional tests for surface active compounds it gives little evidence of activity, which emphasizes that no fixed laws apply to surface active materials; and the effectiveness of compounds must be determined by test. More information may be secured from the manufacturer.

ROHM & HAAS COMPANY, Dept. CP, Washington Square, Philadelphia 5, Pa.

When inquiring specify CP A5753 — see handy form pages 2-3

Spot Test Plate Technique Shows Small Quantity of Precipitate

Shows precipitates 1/40th minimum quantity visible by conventional means.

★ **Useful as a dispersing agent to reduce viscosity of aqueous slurries made up of clays, pigments.**

USES — Fundamentally the action of this synthetic is that of a dispersing agent. The paper industry uses it to disperse pitch and also to disperse asphalt in the recovery of waste paper stocks.

In the tanning industry it serves as a "driving agent" for the tannins, to promote a more thorough and even tanning of the hides. It is also used as an aid in dyeing chrome and vegetable tanned leathers. On chrome leathers, where acid dye is used, it serves as a "leveler" or "dye resist" preventing uneven accumulations of dyestuffs on the hide. Where basic dyes are used on vegetable-tanned hides, it serves as true mordant, fixing the dyes on the leather. The use of this synthetic in aqueous slurries made up of clays or pigments keeps the slurries uniform in solids content and maintains good flow characteristics. Water content is also held to a minimum.

In the ceramic industry water content may be reduced in making the clay ready for the casting process, thus reducing dimensional changes during drying and firing.

Features — Product quality is improved when this material is used in paper production and leather dyeing. When

USES — A spot test plate and reagent granule are useful in analyses by the spot testing technique.

Features — Test plate has mirrors which show up precipitates that are only one-fortieth the minimum quantity visible on the conventional plate. Advantages of the granules are convenience in handling, ready availability of the reagent at all times, instant solubility, complete stability until used, and purity of the reagent.

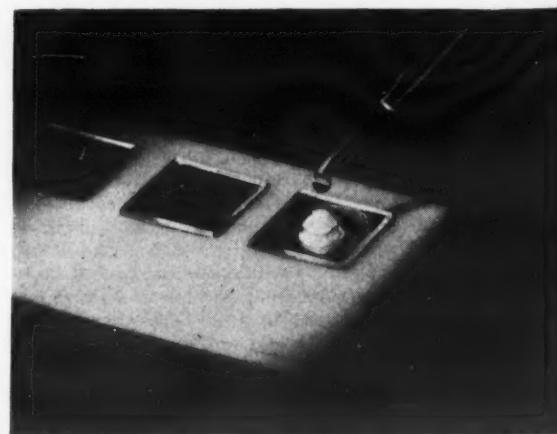
Description — This test plate employs mirrors instead of the conventional test plate cavities as a site for the reaction. Minute traces of precipitate scatter the light passing to and from the mirror, and this diminishes the brilliancy of the mirror.

Reagent granule is a porous, inert granule, similar to fritted glass, throughout which is dispersed a pure, dry chemical reagent, soluble in the liquid to be tested. When two or three drops of the liquid flow over the granule, the reagent is instantly dissolved and as the liquid spreads over the mirror, any precipitate shows up clearly. Granules of sulfosalicylic acid for rapidly determining albumin in urine are now available. Many other reagents and combinations of reagents in this form will be available in the future. This granule will be useful for expensive or hygroscopic reagents and for all types of fieldkits and

vest-pocket outfits. More information on request.

CARGILLE SCIENTIFIC INC., Dept. CP, 118 Liberty St., New York 6, N. Y.

When inquiring specify CP A5753a — see handy form pages 2-3



Spot test plate and reagent granule

CHEMICAL PREVIEW

Pentaerythritol Imparts Fast Drying and Quick Bodying

*Provides high gloss, greater water
resistance and tough film
protective to coatings*

Uses — This product is used in the preparation of alkyd resins, ester gums, hard drying oils, waxes, emulsifying agents, plasticizers and various coating compositions.

Features — The manufacturer claims that paints, varnishes and enamels made with pentaerythritol esters in comparison with corresponding glycerol esters are superior in drying time, flexibility, gloss, toughness, hardness, durability and yellowing.

Description — Material is a technical grade of pentaerythritol which consists of a mixture of about 85% pentaerythritol with 15% related solid polyhydric alcohols, such as dipentaerythritol. The pentaerythritol drying oils are rather simply prepared by heating together a mixture of the fatty acids and the polyhydric alcohol. It is usually desirable to charge all ingredients at room temperature into a closed kettle fitted with a powerful agitator and to heat the mass to reaction temperature, 200-230° C., while stirring. Good agitation is imperative. In general, stoichiometric proportions of the acids and the polyhydric alcohols may be used, although 2 or 3 percent excess alcohol may aid in lowering the acid number without causing any deleterious action. A blanket of carbon dioxide may be maintained over the reaction mixture to aid in the maintenance of light colors. In order to prevent dark colors, catalysts must be selected with caution. Calcium naphthenate, calcium stearate or limed-rosin are very satisfactory. Air-drying alkyd resins prepared with pentaerythritol are permanently flexible when dried, possess extreme hardness, have exceptional resistance to water and oil and their brushing characteristics are excellent.

Physical properties:

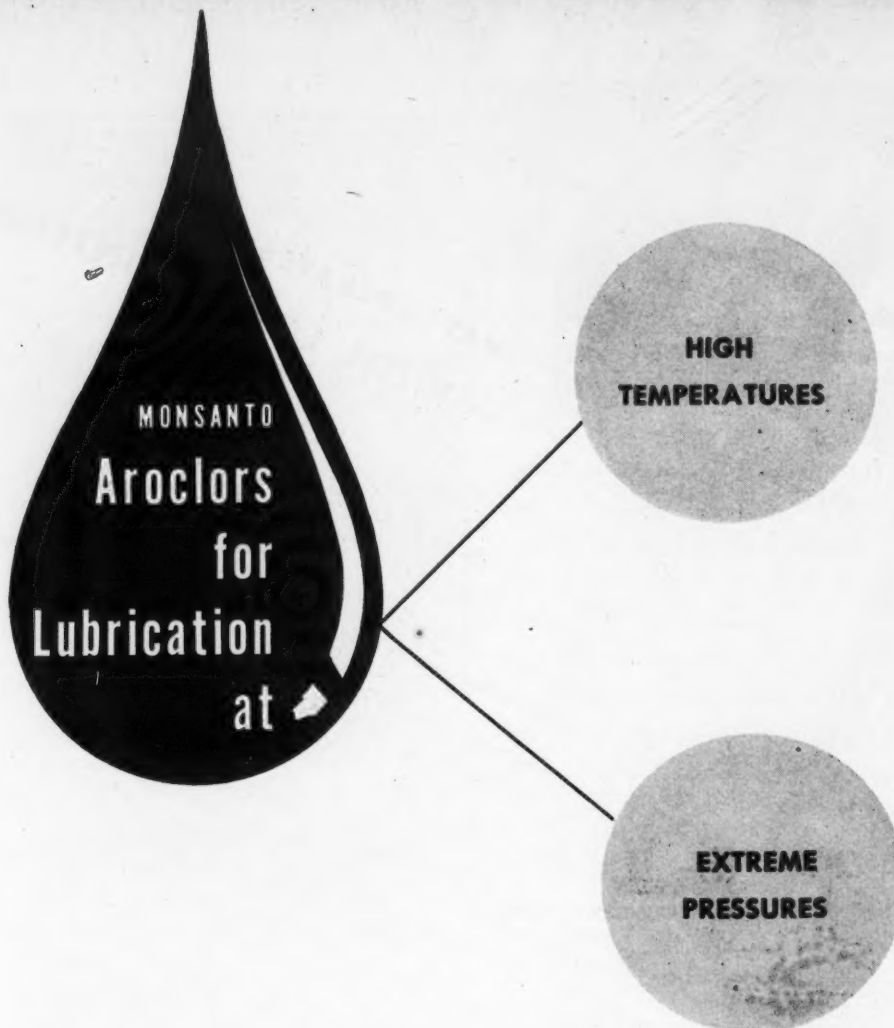
Moisture	0.5%
Ash	0.2%
Melting range	185° - 225° C.
Hydroxyl content (% OH)	47.10% ± 0.5% by acetylation
Combining weight	36.2
Specific gravity	
powder as packed	0.72
fused solid	1.38 at 25°/4° C.
Solubility	
water at 25° C.	8 parts in 100
water at 100° C.	90 parts in 100
alcohol	slightly soluble
glycerine	slightly soluble
oil and fats	insoluble
paraffin	insoluble
benzene	insoluble
acetone	insoluble

Detailed information concerning this product is available on request.

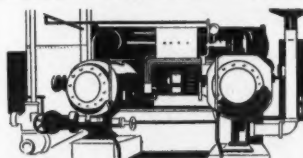
HEYDEN CHEMICAL CORPORATION, Dept. CP, 393 Seventh Ave., New York, N. Y.

When inquiring specify CP A5754 — see handy form pages 2-3

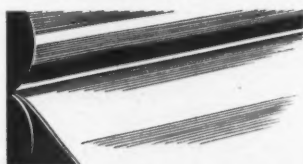
NOVEMBER-DECEMBER, 1946



Among the many applications of Monsanto Aroclors, their use in specialized lubrication is of particular interest.



Their heat-resisting, non-inflammable characteristics make them especially suited for use as a hydraulic fluid under conditions of high temperatures, such as those encountered in governor systems in central stations.



For extreme pressure lubrication re-

quirements present in the rolling of stainless steel and chromium iron, the Aroclors prevent surface seizure and consequent pitting of rolls and scoring of rolled surfaces.

General Characteristics of the Aroclors

...As a series, the Aroclors range in form and appearance from mobile oily liquids to fine white crystals and hard transparent resins. They are heavier than water — possess great adhesive-ness, especially on smooth surfaces — have remarkable penetrating power — are water repellent and flame resistant. Their ability to withstand extreme pressure is unusual.

Send for Bulletin No. P-115. It contains detailed information that may

suggest new and profitable uses to you...Contact the nearest Monsanto Office, or write: MONSANTO CHEMICAL COMPANY, Phosphate Division, 1700 South Second Street, St. Louis 4, Missouri. District Offices: New York, Chicago, Boston, Detroit, Cincinnati, Charlotte, Birmingham, Los Angeles, San Francisco, Seattle, Montreal, Toronto.



When inquiring specify CP A5755 . . . see information request blank, pgs. 2-3

Materials

Porous Ceramic Beads Dry Air And Gases, Adsorb 39% At 80% Humidity

1 lb. contains 2 million sq. ft. surface area; for
packaging, storage, shipment, air conditioning

Uses — Porous ceramic beads for use as a desiccant and moisture adsorbent in the packaging, storage and shipment of any material subject to damage or loss of quality from moisture vapor. For maintenance of low humidity in warehouses, storerooms and ship holds containing furs, cereals and grains, lime, sugar, candy, cement, textiles and other materials; as a corrosion preventive for idle machinery and electrical supplies; for air conditioning and other dynamic-type dehumidifying equipment; to dry refrigerants, solvents and gases such as oxygen and carbon dioxide; for removal of moisture from air compressors; packaging of penicillin in tablet form for oral administration, or packaging of metal and manufactured parts in sealed, airtight containers. In chemical processing, where gases often are required to be moisture-vapor free, and in steel mills using desiccants to dry air for blast furnaces. Manufacturers of compressed air, oxygen, CO₂ and other gases use desiccants to lower dewpoint of gases which are shipped, and public service companies employ dry gas with a desiccant to prevent condensation in the lines supplying industrial and domestic users. This bead-like material is said to offer engineers an opportunity to design more efficient air-conditioning and dehumidifying equipment which can utilize continuous operation principle, but with a solid desiccant. Comparable units are operating at certain oil refineries, where the bead catalyst is employed as a moving bed in catalytic cracking. This material can be employed in the same manner. New uses, as an adsorbent for gases and extraneous odors, and in drying of liquids, are now under investigation.

Features — One pound of beads contains 2 million sq. ft. of surface area. Uniform shape and size (4 to 8 mesh); hard and durable, with negligible loss of weight from dusting; high adsorption capacity (39% at 80% relative humidity); easily and repeatedly regenerated at 300-500° F.; chemically inert, with no reaction to common gases; dries gases; minimum resistance to air flow; rapid heat transfer; non-corrosive to metals. Opens possibilities for new designs in drying equipment. Approved by Army and Navy as a Specification JAN-D-169, Grade A desiccant. By placing a few beads in bottom of a closed glass container, low moisture-vapor content is assured within the package, even though it is opened and closed several times before contents are consumed. Because of its high adsorption capacity, minimum quantities are required. Offers new possibilities for economically lowering relative humidity in air conditioning due to its low cost, uniform size and recalcitrance to attrition loss and dusting. In dynamic-type units, its comparatively low resistance to air flow means increased overall efficiency of the unit, with less power required to operate. Has pronounced ability selectively to adsorb water vapor.

Description — Trade name: S/V Sovabead. Spherical, hard, translucent, almost colorless. Although they appear to be non-permeable solids, beads are honeycombed with ultramicroscopic pores. Chemical composition and large activated surface area give unusual adsorptive qualities. This phenomenon described as a form of adhesion between a solid and a gas, whereby gas is condensed to form an extremely thin film which is held to surface of solid by

CHEMICAL PREVIEW

ODS

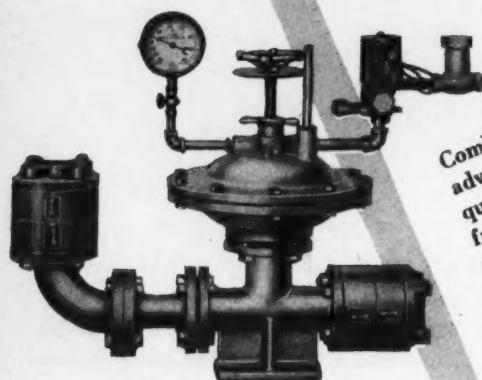
OLIVER DIAPHRAGM SLURRY

THE DIAPHRAGM PUMP THAT OPERATES FOR A LONG TIME —WITH LOW MAINTENANCE

There's no mechanical linkage to the diaphragm....a definite low-maintenance advantage.
There's no perforation in the diaphragm....another definite low-maintenance advantage.
There are no motor, stuffing box, packing or high speed moving parts....still other low-maintenance advantages.

Combined with these features are several operating advantages such as: ability to handle small or large quantities against high heads; ability to draw feed from a deep sump; facilities for changing capacity without stopping; device for "metering" the flow, if desired.

Yes, the O.D.S. is a very practical, useful pump for handling sludges, slurries and corrosive solutions. Hundreds are in use. Why not try one or a battery in your plant? In writing for Bulletin 309, give full details of your pumping requirements.



New York 18, N. Y.
35 West 42nd Street

San Francisco 11,
California

Canada: Sales & Manufacturing Representative

**OLIVER
UNITED FILTERS
INC.**



E. Long Limited, Orillia, Canada

Chicago 1, Illinois
221 N. LaSalle Street

Western Sales Division
Oakland 1, Calif.
2900 Glascock Street

Factories: Oakland, Calif.—Hazelton, Pa.—Orillia, Canada—Melbourne, Australia

10-OUF-2

When inquiring specify CP A5756 . . . see information request blank, pgs. 2-3

Materials

forces of attraction. Composition of surface area influences adsorption performance and capillary influences adsorption capacity since it directly determines available surface area on which adsorption can occur. Intensity at which adsorption occurs between various gases and a given solid (and vice versa) will vary. Thus, selective adsorption of a gas is possible by selecting proper solid. Water vapor acts as a true gas, can be selectively adsorbed on some solids. As a desiccant, Sovabead adsorbs quantity of water necessary to reach equilibrium conditions, which amount varies with relative humidity of atmosphere. In respect that it will not enter into chemical reaction with conventional gases, it is similar to other commercially available desiccants. Suitable for static dehumidification where complete sealing with moisture-vaporproof material such as steel container or suitable plastic or wax barriers is practiced. In this method, moisture vapor from more remote enclosed areas is carried by diffusion to air immediately surrounding beads, where it is removed. In dynamic dehumidification, equipment is designed to circulate air from system through a bed of active beads. Outgoing air is relatively dry, and is circulated back into system. When beads become saturated, they are regenerated by passing heated air through beads and discharging moisture to outside atmosphere. Cycle is then repeated. Equipment is often connected to packaged enclosure to dry contents completely before beads are introduced and package sealed. This is done because all material, including unpainted metal surfaces, will give up adsorbed moisture. Amount of moisture removed is often 10 to 30 times that of moisture actually carried by air. After system is thus dried, a considerably smaller quantity of beads can be sealed within system with assurance of satisfactory results. Beads can be reactivated either by direct heating with hot air or by indirect heating with heat transfer tubes and concurrent use of stream of gas or air to sweep away released moisture. Regeneration at 400° F. shows 80% removal of adsorbed moisture in 10 minutes, about 98% in 20 minutes. Residual moisture content is 4-6% by weight. Heating at 400° F. for 20 hours does not lower this figure. Regeneration at 500-700° F. will further reduce residual moisture content, but at expense of permanent reduction in adsorptive capacity. Beads should never be allowed in direct contact with water, as adsorption is so rapid that considerable breakage results.

SOCONY-VACUUM OIL COMPANY, Dept. CP, 26 Broadway, New York 4, N. Y.

When inquiring specify CP A5757 — see handy form pages 2-3

Composite Tool Steels Available in Eight Standard Sizes

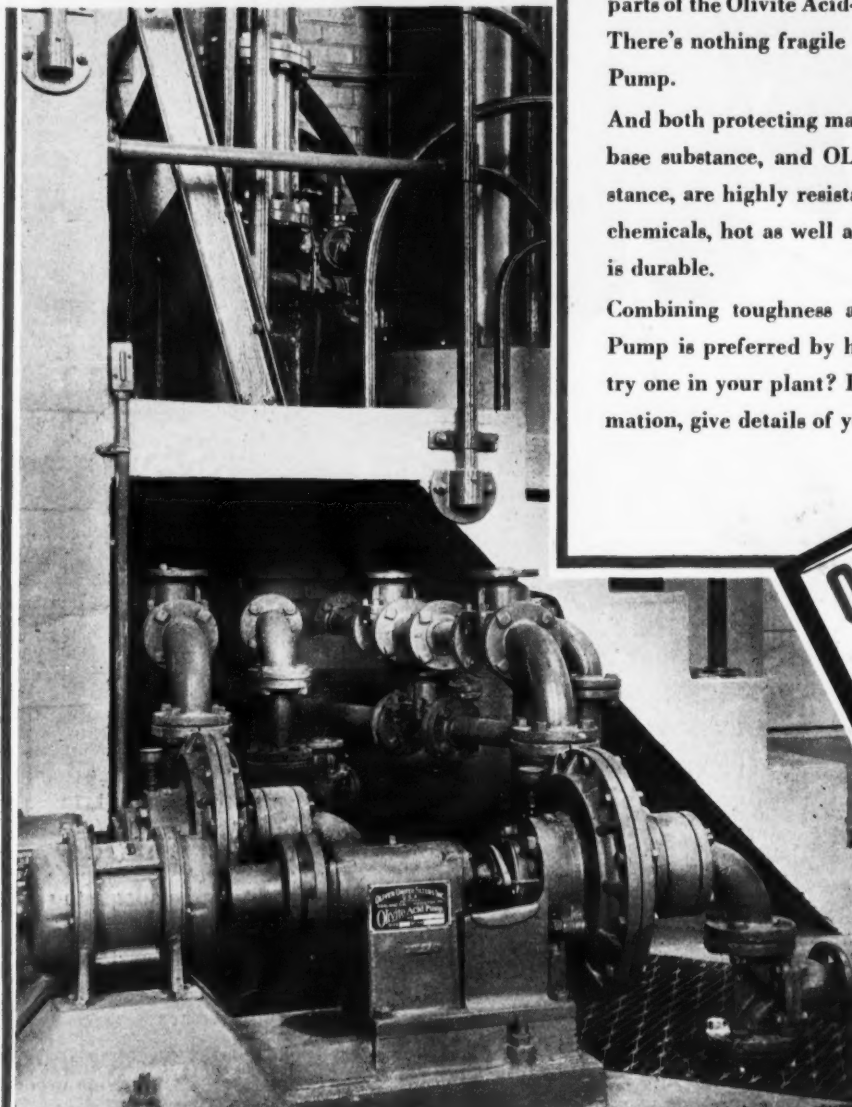
Jessop Composite Type "R" Tool Steel, combining hardness and edge-holding properties of high alloy steel with toughness and machinability of low alloy steel, is graphically described in an illustrated booklet. Composite material produced by patented Armstrong method giving continuous and integral interdiffusion weld during hot rolling operation. Useful in wood pulp, paper, wood working, sheet metal and textile industries. Applicable to eight standard assemblies ranging from two to 10½ inches wide. Illustrations include hog knife, shear blade and chipper knives. Selection of correct backing steel and proper design of bevel are discussed. Diagrams of tool steel assemblies, also sizes, specifications and base prices. Width extras are shown. Bulletin delivered on request.

JESSOP STEEL COMPANY, Dept. CP, Washington, Pa.

When inquiring specify CP A5758 — see handy form pages 2-3

OLIVITE

The Non-Fragile Acid Pump that can Handle Hot Acids



Accidental blows will not damage the pumping parts of the Olivite Acid-Handling Pump. It's strong. There's nothing fragile or brittle about the Olivite Pump.

And both protecting materials OLIVITE, a rubber-base substance, and OLIVEX, a strong, resin substance, are highly resistant to most acids and many chemicals, hot as well as cold. In short, the Olivite is durable.

Combining toughness and durability, the Olivite Pump is preferred by hundreds of users. Why not try one in your plant? In writing for further information, give details of your pumping requirements.



Send for Bulletin 308. It describes in detail the 1½", 2" and 4" Olivite Acid-Handling Pumps.

New York 18, N. Y.
33 West 42nd Street

San Francisco 11,
California

Canada: Sales & Manufacturing Representative

OLIVER
UNITED FILTERS
INC.



E. Long Limited, Orillia, Canada

Factories: Oakland, Calif.—Hawtorn, Pa.—Orillia, Canada—Melbourne, Australia

Chicago 1, Illinois
221 N. LaSalle Street

Western Sales Division
Oakland 1, Calif.
2908 Glascock Street

10-OUT-4

When inquiring specify CP A5759 . . . see information request blank, pgs. 2-3

RESOURCES

the key to quality

• In your own industry you probably have found that quality begins with raw materials. This is equally true in producing caustic soda, soda ash, chlorine and other industrial chemicals.

For many years Wyandotte Chemicals Corporation has relied on its own sources for three of the basic raw materials in chemical manufacture. Coal from Wyandotte-operated mines in Western Pennsylvania, salt from Wyandotte deposits and limestone from

Wyandotte quarries are all funneled into the vast plants at Wyandotte, Michigan.

This control of materials, at the source, assures adequate supplies and efficiency of operation. These are passed on to Wyandotte customers in the form of superior products.

Controlled raw materials, like controlled methods, have played an important part in making Wyandotte one of the world's great producers of chemicals.



WYANDOTTE CHEMICALS CORPORATION

MICHIGAN ALKALI DIVISION, WYANDOTTE, MICHIGAN

When inquiring specify CP A5760 . . . see information request blank, pgs. 2-3

Materials

Preventing Rust During Interval Between Phases of Manufacture

Compounded inorganic salt product protects gears, screws, sheets, etc.

Uses — When brass shortages forced resort to steel in making cases for the thousands of shells rust development during fabrication imposed a problem. This inhibitor, now known as Pennsalt RI-50 was developed to overcome this obstacle by preventing rust formation during intervals of manufacture. It is now being used to prevent rust in such applications as the manufacture of: screws, gears, steel sheets, belt links, etc.

Features — Requires no rinsing before painting. Does not create objectionable working conditions nor contribute to dermatitis.

Description — Pennsalt RI-50 is white in color and is furnished in powdered form. It was developed for use in water solutions into which ferrous metal parts can be dipped. It is suggested that it be used in a concentration of 2-4 per cent by weight. Hot water solutions (175° F. or higher) are recommended so that parts will dry as quickly as possible. Treatment with Pennsalt RI-50 should not immediately follow pickling or an acid dip. There should be an intervening rinse to remove any acid remaining on the parts. Alkaline cleaner films should be rinsed off with water prior to a Pennsalt RI-50 dip. Otherwise the life of the rust protecting bath will be shortened. Pennsalt RI-50 is supplied in non-returnable drums of 25, 100 and 300 pounds.

PENNSYLVANIA SALT MFG. CO., Dept. CP, 1000 Widener Bldg., Philadelphia 3, Pa.

When inquiring specify CP A5761 — see handy form pages 2-3

★

Plastic is Lighter Than Cork Yet May be used Structurally

Can be bonded between two sheets of metal, wood or plastic

Uses — As light weight cores in airplane floor panels, tail assemblies and wing structures, in refrigerators, luggage and sections of prefabricated houses, furniture, core material for trucks, boats, and light toys.

Features — Lighter than cork, this new plastic combines insulation properties with structural strength when bonded between two sheets of metal, wood or plastic. Thermo-setting resins can be used to cement it. Material is uniform in density, is not brittle or is subject to cracking under vibration. The plastic has excellent compressive strength.

Description — This material is cellular cellulose acetate and is manufactured by heating a mixture of cellulose acetate and other materials under pressure. Releasing the pressure foams the material into a mass of bubbles of pin point size. The mass becomes hard and rigid when chilled as it comes out of the machine. It is manufactured in strips at present which may be bonded with ease to metals. This plastic may be tooled or shaped with any woodworking machinery. Several densities will be offered from four to nine pounds per cu. ft. Detailed information may be obtained.

E. I. DuPONT de NEMOURS AND COMPANY, INC., Dept. CP, Wilmington 98, Del.

When inquiring specify CP A5762 — see handy form pages 2-3

Materials

Liquid Scrub Soap Extended 100%

Emulsifying agent does not increase fat consumption

Uses — For extending liquid scrub soaps by 100% without increasing fat consumption.

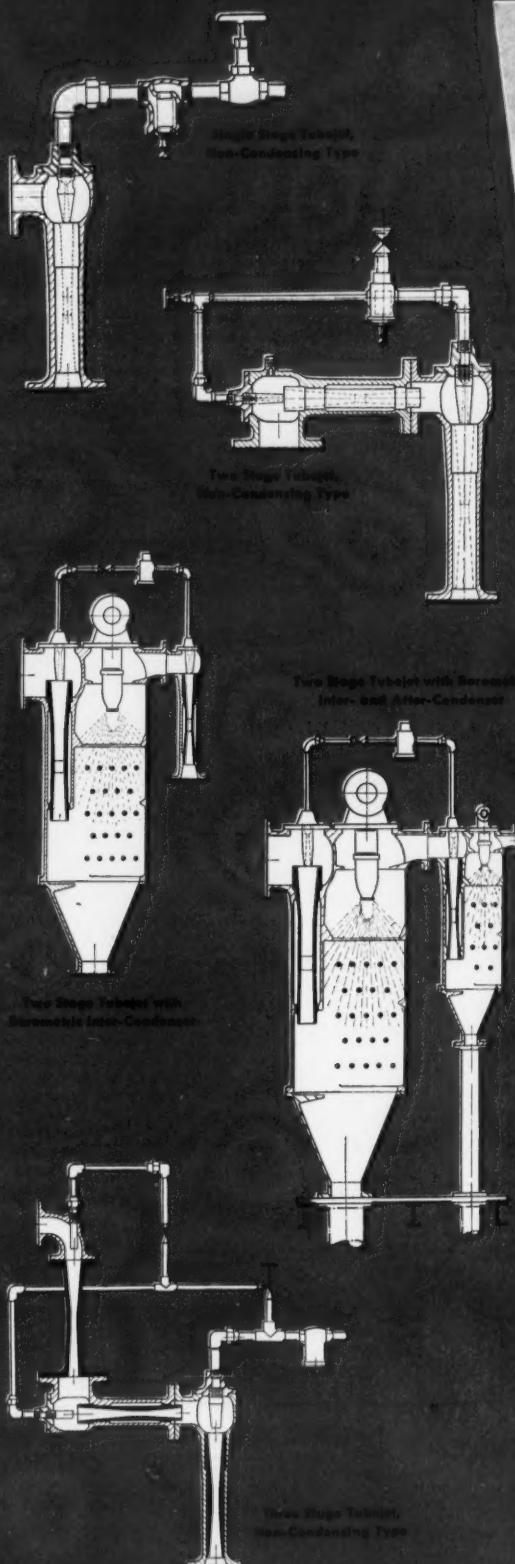
Features — Cuts soap content of finished product to 9 or 10%; gives satisfactory results from standpoint of detergency, with added wetting power, improved rinsability. Highly effective in hard water. Gives clear solution and above-standard viscosity. Has been tested with 20% corn oil soap, 20% coconut oil soap and standard trade name soaps made with tall and linseed oil fatty acids. In every case it is claimed that formula did not reduce foam and gave good results from standpoint of detergency.

Description — While any given formulation must be adjusted slightly to accommodate the particular type fatty acid base employed by the soap manufacturer, maker recommends a basic formula containing .4% methyl cellulose, 44.5% water, 0.1% Tamo 1 NNO, 5% Triton X-300 and 50% liquid potash soap (18-20% soap). Methyl cellulose is manufactured under various trade names by other chemical companies. Basic extending ingredient, Triton X-300, is one of a group of synthetic wetting agents widely used by textile industry for scouring, penetrating and leveling. This group also widely employed in cosmetics, car washes and soapless household cleaners. In preparing formula, methyl cellulose is dissolved by adding it to portion of the water which has been heated near boiling. Methyl cellulose is allowed to soak 20 or 30 minutes and remainder of water is then added cold and stirred until smooth. Tamol is dissolved in portion of the water, Triton added, and entire mixture is added to soap. The cloudy mixture clears when scrub soap is added. Where complete clarity is unimportant, RHotex GS can replace the methyl cellulose and Tamol. RHotex GS is more readily available than methyl cellulose, also is a more effective thickener, but gives a somewhat turbid liquid soap.

ROHM & HASS COMPANY, Dept. CP,
Philadelphia, Pa.

When inquiring specify CP A5763
— see handy form pages 2-3

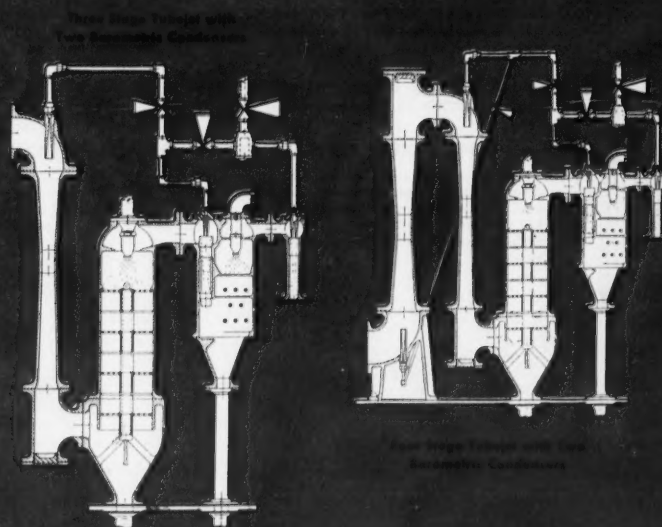
For more information on product at right, specify CP A5764
... see information request blank between pages 2-3.



STEAM JET AIR EJECTORS Engineered to Your Needs

Our complete line of Tubejet Steam Jet Air Ejectors is illustrated to demonstrate that the selection of the correct unit for an individual job requires more than some people may think. It requires years of experience in successful installations to correctly solve the "never before encountered" problems of today's new methods and industries. Radojet now Tubejet are the oldest names in steam jet air ejectors, known to the most people in the world today; we have the most experience because we believe we have made the most installations. If there is any vacuum problem within the scope of ejectors which we have not already met and solved, we don't know of it. You can safely rely on our advice, whether your problems are new to you or to the world. Bulletin on request, catalog in preparation; write to us now.

C. H. WHEELER MFG. COMPANY
1810 SEDGLEY AVENUE, PHILA. 33, PA.
REPRESENTATIVES IN MOST PRINCIPAL CITIES



C. H. Wheeler

STEAM CONDENSERS, AIR EJECTORS,
COOLING TOWERS, HEAT EXCHANGERS
OF PHILADELPHIA

EVERY OPEN TANK JOB should be Specifically Engineered

with

Process Adapted Agitation

IMPORTANT!

Save
TIME AND MONEY

"MIXCO" and "LIGHTNIN" Agitators offer the only complete line of self-supporting nozzle-mounting equipment. Nothing else to buy. No structural steel to design and make—any pipe fitter can attach to tank in a few minutes. Easily removable for use elsewhere. Turbines designed to assemble through small openings.

WHERE TO USE TOP-ENTERING MIXERS

If you are planning a new open tank mixing installation—or if you want maximum efficiency from your present job—a "Lightnin" or "Mixco" Top-Entering Mixer is by far your best bet. Mixing Equipment Company will engineer "Lightnin" and "Mixco" Mixers specifically to each individual job—taking into consideration all factors, including quantities of liquid handled, viscosity, results required, etc.

Available in sizes from ¼ to 50 H.P. for agitation of liquids up to 20,000 centipoises, "Lightnin" propeller agita-

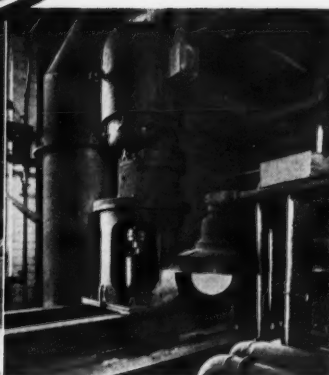
tors operating at speeds 420 RPM and higher, are satisfactory for light liquids up to 4,000 centipoises. "Mixco" Turbine agitators operate at lower speeds 55 RPM upwards, and can be used in all liquids through 20,000 centipoises viscosity.

Turbine agitators can be used with much longer shafts with and without step bearings.

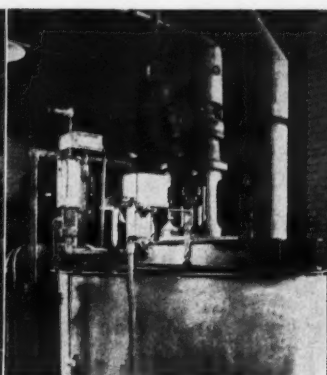
If you have a severe operation where step bearings are now giving trouble, consult with us on new unit to operate without step bearing. Recent research (unpublished) on critical shaft speeds, enables us to solve many problems of this nature, previously considered impossible.



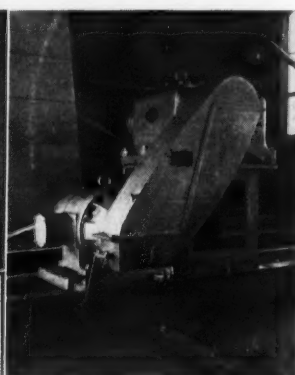
For loose covered tanks with vent stacks—note neat accessible construction and heavy Timken bearing member.



Note simple—"4 ball" mounting and separately supported shaft—connected to speed reducer by FLEXIBLE COUPLING.



Compact vertical design permits location of other fittings on tank top. May be furnished with other types of speed reducers.



Right angle reducer is shown with chain drive from standard motor, bolted to common support. Can be furnished with Vee-belt drive or direct connect.

GEAR REDUCER ADAPTER

Most gear reducer manufacturers recommend that the mixer shaft be connected to the reducer by means of a flexible coupling. This means of connecting removes the thrust and

vibration loads from the reducer, increasing its life and reducing maintenance. Bearing support for both radial and thrust loads is therefore required for the mixer shaft.

The Basis of Our Recommendations

Twenty-five years of experience have resulted in an organization, research facilities and skill which qualify Mixing Equipment Company as a leading authority in the whole broad field of agitation.

Mixing Equipment Company offers its services in the solution of any problem involving controlled recirculation of liquids to produce physical and chemical changes, as included in the table at the right:

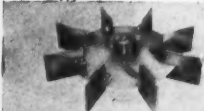
MIXING EQUIPMENT COMPANY OFFERS

Complete coverage of industrial areas with service for both individual user and engineers or equipment manufacturer.

Assumption of responsibility for selection of mixer size, types, performance characteristics within limits of existing technology.

Bleeding Miscible Liquids	Mixing Immiscible Liquids	Crystallization Control	Gas Absorption and Dispersion	Suspension of Solids	Heat Transfer
Simple Mixing of soluble liquids as in reducing concentration	Washing of Liquids Extraction Connecting Causalic Treating Emulsions	Precipitation Evaporation Systems	Hydrogenation Aeration Gas Scrubbing Chlorination Gas Washing	Slurries Slaking Lime Suspension of: After acid, activated carbon, fillers, Earth, Crystals while dissolving	Still Evaporators Reactor Vessels Heating Cooling

TURBINE AND PROPELLERS



Straight blade Radial Flow Turbine. Simplified shape for general agitation. Operates in speed range 55 RPM to 155 RPM according to size.



Showing blade type and method of attachment. Number of blades is variable. Blades may be cast or fabricated.



Three blade marine type propeller (Operates 420 RPM and higher).

MIXING EQUIPMENT CO., INC.

1085 Garson Ave., Rochester 9, N. Y.

"LIGHTNIN" PORTABLE MIXERS TOP-ENTERING MIXERS SIDE-ENTERING MIXERS LABORATORY MIXERS "MIXCO"

Materials

Silicone Rubber Gasket Flexible After 1 Year's Heating At 350° F.

Used to seal drying, baking ovens; maintain uniform conditions; does not adhere to metal

Uses — As a gasket material for drying and baking ovens in place of the ordinary rubber or rubber-asbestos compound now commonly used.

Features — High heat resisting qualities and flexibility at both high and low temperatures. While hardness increases somewhat after a year's heating at 300 degrees F. considerable flexibility is maintained. This resiliency aids materially in maintaining standard uniform conditions by preventing entrance of cold air or leakage of hot air from the ovens maintained under vacuum or pressure. The softness and resiliency of the material eliminates the need for close machining of the steel usually required to produce a tight fit between the door and seat.

Description — In contrast to silicone rubber's retention of considerable flexibility is the hard surface and non-flexibility of Buna S as indicated in test of only 35 hours at 300 degrees F. In addition to the features previously enumerated, silicone rubber will not adhere to metal or any other material in spite of its continued use at high temperatures and under oxidizing conditions. This will eliminate the possibility of any vulcanizing action to metal when submitted to high temperatures. The chemical inertness of the silicone rubber is further evidenced by its non-gassing characteristics under a high vacuum at elevated temperatures. The plastics division of this organization produces silicone rubber in a variety of extruded shapes and sizes including round, square, flat and tubular.

GENERAL ELECTRIC CO., (Plastics Div.) Dept. CP, Pittsfield, Mass.

When inquiring specify CP A5765 — see information request blank, pgs. 2-3

★

Design Close Coupling Motors

Protected-type motors, flange or face mounted, for vertical or horizontal coupling to centrifugal pumps, agitators, atomizers. Bulletin SL-300-3.

CROCKER-WHEELER ELECTRIC MANUFACTURING COMPANY, Dept. CP, Ampere, N. J.

When inquiring specify CP A5766 — see information request blank, pgs. 2-3

MIXING EQUIPMENT CO., INC.

1085 Garson Ave., Rochester 9, N. Y.

Please send me the literature checked:

- ☐ B-66 and B-76 Side Entering Mixers
- ☐ B-68 and 68B Permanently Mounted Mixers for Pressure Vessels and Open Tanks
- ☐ B-75—Portable Mixers (Electric and Air Driven)
- ☐ B-77—Laboratory Mixers
- ☐ Mi-11—Operating Data Sheet

Name.....

Title.....

Company.....

Address.....

For more information on product at left, specify CP A5767 . . . use information request blank between pages 2-3.

Materials

Light and Compact, Santocel Makes Ideal Insulating Material

*Silica product has good future in rockets, raincoats
and refrigerators*

Uses — Has wide application as heat or cold insulant, also uses entirely apart from insulation. I.e.: in rubber, Santocel gives strength without discoloring effect of carbon black; in raincoats, prevents stickiness; in furniture coatings, affords dull sheen; in printing inks, prevents pulling the nap off paper. Best field for post-war development, however, seems to be in insulating. Thin-walled, Santocel-insulated home refrigerators yielding about 40% greater capacity per cubic foot of kitchen space occupied have been designed by several manufacturers. Extensive use of material in sub-zero food storage compartments, liquid oxygen tanks and stratosphere chambers. Military applications also include Navy rocket program, aircraft package liners, use in 20 mm. shells, filler compounds for aircraft, radios and radar equipment, unbreakable insulated food containers for army and navy air corps, army air force wheel chocks, cellophane gas capes, army ponchos, Marine uniforms and blood serum containers.

Features — Twice as efficient as cork in slowing heat transmission. Less bulky: a handful contains millions of "dead air" pockets. Extremely light: its void space is about 94%, where the void space of ordinary silica gel is 30-50%.

Description — A powdery substance, known technically as silica aerogel. Prepared by drying a colloidal silica gel in such manner that a light, fluffy structure of solid phase results.

MONSANTO CHEMICAL COMPANY, Dept. CP, St. Louis 4, Mo.

When inquiring specify CP A5768 — see handy form pages 2-3

★

Rubber Base Paint Has Wide Application on Alkali and Acid Containing Surfaces

*Contains no vegetable oils and has high
chemical inertness*

Uses — As a coating on any exposed surface of concrete, wood or steel, which it is desired to protect from sun, rain, and weathering.

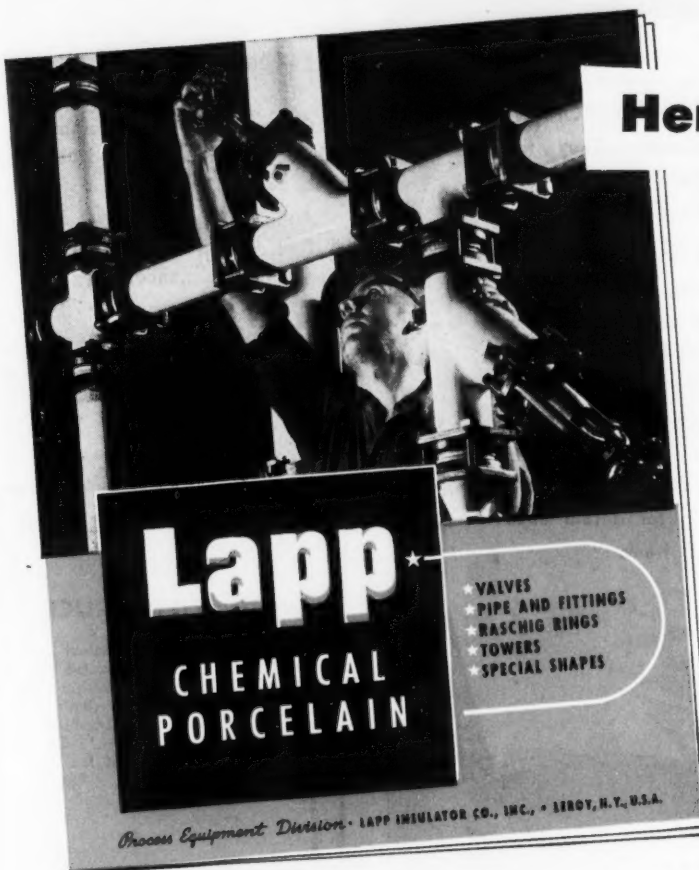
Features — It is very resistant when used as a coating on concrete floors, especially basement floors. Chemical inertness which makes this coating resistant to alkalis also makes it resistant to chemicals of nearly every kind, acids, salts etc. Coating is desirable for outdoor exposures where the effect of rain, sunshine, alternate wetting and drying, chemical fumes and similar agents do considerable damage to protective coatings.

Description — This is the first coating to be devised that has freed users of the alkali handicap by using a rubber-resin formulation instead of one containing vegetable oils. Complete literature is available.

TRUSCON LABORATORIES, INC., Dept. FP, Caniff & Grand Trunk R.R., Detroit 12, Mich.

When inquiring specify CP A5769 — see handy form pages 2-3

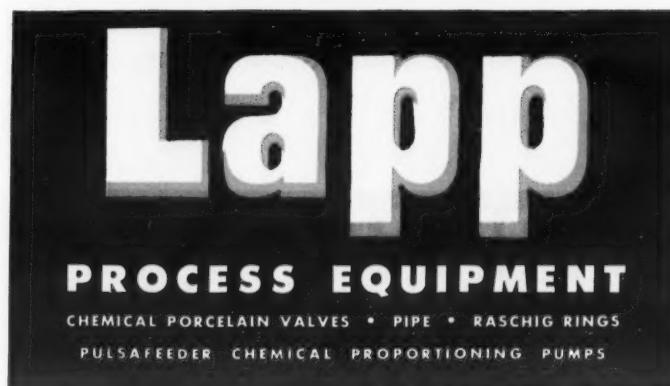
GOT A PROBLEM IN PROCESSING OR HANDLING CORROSIVE CHEMICALS?



Here's complete information on Lapp chemical porcelain . . .

In hundreds of industrial processing plants, Lapp Chemical Porcelain has proved to be "the first satisfactory answer to the problem of handling and processing corrosive chemicals." For complete information about the solid porcelain Lapp valves, pipe, raschig rings, chemical towers, and other pieces, send for the new Lapp Bulletin 244. You'll also find a description of the chemical and mechanical characteristics of this non-porous ceramic material, as well as a chapter of useful information on proper installation procedure and maintenance.

SEND FOR YOUR COPY!



Lapp Insulator Co., Inc.
Process Equipment Division
Le Roy, New York

Please send a copy of Bulletin 244, describing Lapp Chemical Porcelain.

Name.....

Position.....

Company.....

Street.....

City.....State.....

When inquiring specify CP A5770 . . . see information request blank, pgs. 2-3

Again and Again ... They Come Back for THE MOTORIZED HydroElectric

Famous firms continue to re-order HYDROElectric Lift Trucks for one basic reason: They find HYDROElectrics superior, in performance and economy, to any other motorized lift truck.

They know they can depend on every HYDROElectric to do the work ordinarily requiring 3 or 4 men. . . Move bigger loads with effortless ease. . . Speed up handling amazingly. . . Operate 24 hours a day, with absolute safety and negligible downtime. Users state

HYDROElectrics afford sensational economies — cut handling costs as much as 75% — quickly pay for themselves several times yearly. Write today for Folder H for details about this remarkable motorized truck.



USED BY AMERICA'S LEADING INDUSTRIES

Bendix Aviation, Crucible Steel Casting Co., Electric Storage Battery Co., Firestone Tire & Rubber Co., Goodyear Tire & Rubber Co., R.C.A. Victor, Reynolds Metals Co., Wright Aeronautical Corp. — and hundreds of others.



LIFT TRUCKS, INC.

Walter Stuebing, President

2425 Spring Grove Ave.

Cincinnati 14, Ohio

Only the HYDROELECTRIC Offers So Much

- Positive gear drive to load wheel.
- 4 wheels for stability.
- Costs only 1/3 and weighs only 1/3 of other powered trucks of equal capacity.
- Records up to 21 years of 8 hour-day performance.
- Engineered by the Stuebing, Pioneers in Lift Truck Construction since 1910. Patented.

USERS SAY IT'S THE FINEST HAND LIFT TRUCK

Whether you select the RED ARROW or the HYDROMATIC you get the finest in easy single or multi-stroke hydraulic-type hand lift trucks. Capacities up to 8000 lbs. Easy lift and steer. Pay for themselves 5 to 10 times yearly.



Materials

Inhibited Acid Solution Cleans Power Boilers and Heat Exchangers

May also be used for pickling and zinc stripping

Uses — This compound is used in the cleaning of power boilers, heat exchangers, general pickling and the stripping of zinc plate.

Features — To clean a heat exchanger of an air conditioning plant required the dismantling of the entire apparatus. The hard water scale used to be removed by manual chipping which took from two to three days. At best by that method only a fair cleaning job could be done. By the use of the compound described satisfactory cleaning was accomplished in only two hours. Heat transfer efficiency of the unit was restored.

Description — With the use of an acid-proof mixing tank the compound is diluted with four parts of water. The tank is then connected to a circulating feed pump and the solution circulated through the unit it is desired to clean. Solution temperature should be kept at 140° F. Titrations are made of the acid cleaning solution and when the acidity falls to constant value, the solution is dumped and a neutralizing solution of perhaps sodium carbonate is circulated and flushed. This is an acid plus the correct inhibitors and is furnished as a clear amber liquid weighing 9.6 pounds per gallon. Containers are 13 gallon carboys containing 126 pounds net.

PENNSYLVANIA SALT MANUFACTURING COMPANY, Dept. CP, Special Chemicals Division, 1000 Widener Bldg., Philadelphia 7, Pa.

When inquiring specify CP A5772 — see handy form pages 2-3

★

Non-Volatile Ceramic-Type Coating Defies 1200° F.; Repels Rust, Acid

*Aluminum silicate beats dull red and chills;
gallon sprays two coats on 300 sq. ft.*

Uses — Low temperature alkali, aluminum silicate, essentially ceramic in nature, for protecting and finishing air-conditioning conduits, cement building blocks, metal roofing shingles and siding, steel coal cars, pipelines, gas and aircraft heaters, stoves, automobile exhaust pipes, tile, pottery, similar objects and materials from rust, corrosion, heat, impact, abrasion, scratch, acids and alkalis. Applications include panel ray heaters, floor furnaces, hot stacks, automatic switch boxes, top plates on electric hot plates, brackets for soldering equipment, ladles and pyrometer guards, lead pots and large, industrial washing machines. Wartime uses: preheaters on bombers, also tent hoods, field ranges, spark arrestors, ammunition boxes, transformer cases, etc. Presents good foundation for shellac, varnish or paint. One of largest applications was to a two-ton cyclotron.

Features — Non-volatile, non-explosive. Withstands temperatures to 1200° F. Has withstood 200-hour salt spray test, accelerated weather tests and red heat without being destroyed. Manufacturer claims actual 6½ year weather test of metal thus treated shows no deterioration of coating or metal. If scored with a sharp instrument to

CHEMICAL PREVIEW

Materials

expose raw metal, rust will not undermine coating. Adheres well to ferrous metals, which may be heated dull red and submerged repeatedly in cold water with no ill effect to coating. A thin, standard, two-coat application from .0065" to .0013" thick gives proper protection. May be dipped or sprayed. Decorative: available in black, yellow, red, green, brown, olive-drab, buff. Resistant to following chemicals for more than 1000 hours: cold acetic acid, calcium chloride, caustic soda 20% sol., magnesium chloride, muriatic, sulphuric and tannic acid; cold or hot acetone, alcohol, benzene, ethylene dichloride, ethyl acetate, glycerine, kerosene, linseed oil, gasoline, methyl acetate, oleic acid, paraffine oil, toluene and turpentine. Resistant 18 hours to hot caustic soda 20% solution.

Description — Trade name: Kaykote. Both a process and material. An alkali aluminum silicate impregnated with hydrocarbons, having as one of its base ingredients a little-known, oil-bearing halloysite. In its natural state, Kaykote resembles dull, soft coal. After patented processing, extracted portion resembles soft vaseline. No manifestation of colloidal properties in natural mineral until hydrocarbons have been broken down by special process. Extracted portion is extremely fine, particle sizes ranging from 1/10 to 1 micron and possessing colloidal properties. Although ceramic in nature, no relationship is said to exist between this coating and porcelain enamel, paint or lacquer. Soluble and insoluble silicates are so processed that they are in suitable suspension for application by spraying or dipping. Material is then cured through a heat cycle from 250-300° to 700-750° F., preferably in recirculating-type furnace or oven. Period of curing depends on type of product and weight of metal sections which must be brought up to curing heat. Metal may be prepared for coating either by sand blasting or chemical cleaning such as is customary with other type ceramic coatings. Coating is applied direct to this cleaned metal surface without further preparation. If metal is slightly corroded, it should receive an acid or neutral bath to remove rust. One gal. sprays 300 sq. ft., two sides or coats. Experienced operators are required. Light, uniform spray that just "wets" the metal surface is sufficient for each coat. In wet weight, this should approximate 7 grams per sq. ft.

KAYKOTE DIVISION, KRAUS RESEARCH LABORATORIES, Dept. CP, Sparks, Md.

When inquiring specify CP A573 — see handy form pages 2-3

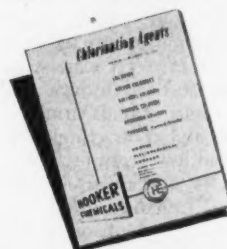
Corrosion Resistant Ceramics Are Subject of Catalog

An eight page catalog contains information on corrosion resistant equipment including towers, pumps, agitated kettles, storage vessels, pipe and fittings, coils, acid elevators, evaporating dishes, sinks, exhausters and complete plant installation of stoneware. These materials are stated to be not only corrosion resistant but actually corrosion proof. They will withstand the action of all acids except hydrofluoric. Attention is called to custom engineered apparatus of ceramics design. Units are pictured beside descriptive text. Capacities are given where indicated and dimensions are included. Of special interest are the tower packings in the form of partition rings and spiral rings. Also of note are the chlorine coolers and the porous porcelain diaphragms for electrolytic work. Literature will be sent on request.

GENERAL CERAMICS AND STEATITE CORPORATION,
Dept. CP, Chemical Equipment Division, Keasbey, N. J.

When inquiring specify CP A5774 — see handy form pages 2-3

For Chlorine in Convenient-to-Use Form Use Hooker Sulfur Chlorides



The Hooker Sulfur Chlorides, mono- and di-, provide convenient sources of chlorine in chemical processes where the use of elemental chlorine is not feasible. In these Hooker products you can always be sure of a carefully controlled chlorine content. The Monochloride contains a minimum of 50% chlorine, while the Dichloride has a minimum of 66% chlorine.

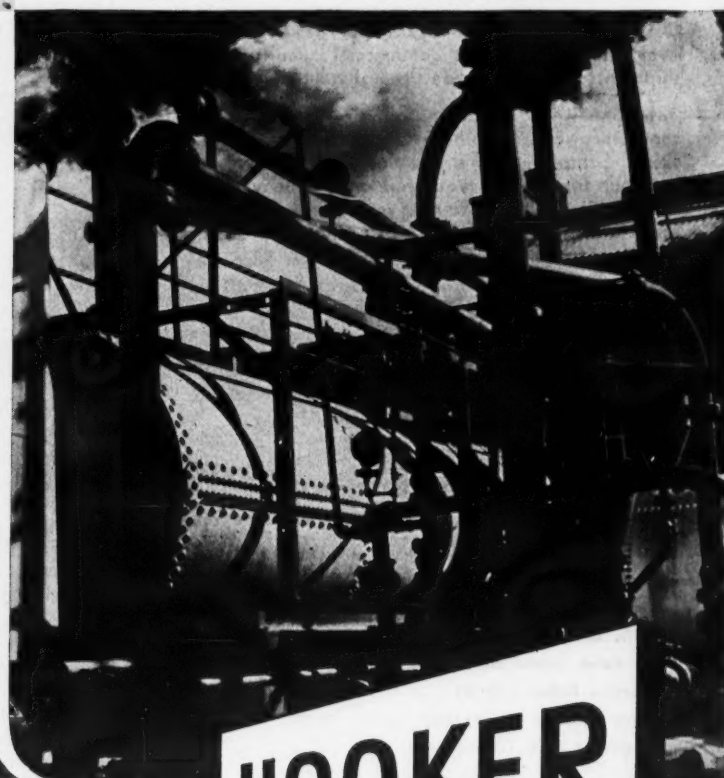
Besides the more common uses as chlorinating agents, the Sulfur Chlorides have a wide variety of possible applications in many different fields. In reactions with unsaturated hydrocarbons it is possible to introduce the sulfur or chlorine or both into the molecule.

Sulfur Dichloride may be used as a chloridizing agent in the refining of various sulfide ores; as a reagent in the manufacture of organic acid anhydrides, various rubber substitutes and other organic chemicals.

Sulfur Monochloride is also used in the manufacture of a variety of organic chemicals. It has been used as an agent for the cold vulcanization of rubber products and in the manufacture of rubber substitutes. It may be used as a solvent for sulfur and as a polymerization catalyst to increase the viscosity of fatty acids.

Hooker Bulletin 328A, "Chlorinating Agents," gives more detailed information on the possible uses of these two Hooker products as well as other Hooker Chlorinating Chemicals. Technical Data Sheets Nos. 759 and 760 describe in more detail the physical properties of the Hooker Sulfur Chlorides. Copies of these bulletins will be sent when requested on your business letterhead. Your problems in handling these Hooker Chemicals will receive the careful attention of our Technical Staff.

*A part of the Hooker facilities
for the production of chlorinated compounds.*



HOOKER CHEMICALS

HOOKER ELECTROCHEMICAL COMPANY

15 Forty-seventh St., Niagara Falls, N. Y.

New York, N. Y. • Wilmington, Calif. • Tacoma, Wash.

Caustic Soda

Muriatic Acid

Sodium Sulfide

Paradichlorobenzene

Chlorine

Sodium Sulphhydrate

3058

When inquiring specify CP A5775 . . . see information request blank, pgs. 2-3

SOME SOLVENTS HAVE HIGH BOILING POINT
OTHER SOLVENTS HAVE COMPLETE WATER MISCIBILITY

Tetrahydrofurfuryl Alcohol HAS BOTH

High boiling point (170°C to 180°C) of tetrahydrofurfuryl alcohol combined with its complete miscibility with water gives a means of carrying on reactions with water soluble materials at temperatures not otherwise practical.

These unique characteristics of tetrahydrofurfuryl alcohol may be reason enough for your consideration of this primary alcohol, but in addition, it is an excellent solvent in its own right. Many complex organic substances that are not soluble in common solvents, go into solution readily in tetrahydrofurfuryl alcohol. An economical way of using tetrahydrofurfuryl alcohol for these materials is to make a concentrated solution in the alcohol and then diluting to the desired concentration with common diluent.

Q. O. Brand tetrahydrofurfuryl alcohol is available in standard commercial quantities and shipments are being made promptly.

Data Sheet No. 87 giving physical and chemical characteristics and other suggested uses is available. Samples of this chemical will be furnished for your tests when requested on company letterhead. Literature references and the help of our Staff in its application to your particular problems are yours for the asking.

Q. O. Brand

TETRAHYDROFURFURYL ALCOHOL

(Technical)



Storage stable liquid of permanent water white color with a mild odor.

Molecular Weight.....	102.13
Boiling Range, °C.....	170 to 180
Specific Gravity (25/25°C).....	1.052
Flash Point (open cup) °C.....	75
Refractive Index (25/D).....	1.4502
Surface Tension (Dynes/cm).....	36.5
Viscosity at 25°C (Centipoises).....	5.49

The Quaker Oats Company CHEMICALS DEPT.

1930 Board of Trade Bldg.

141 W. Jackson Blvd.

Chicago 4, Illinois

TETRAHYDROFURFURYL ALCOHOL

FURFURAL • FURFURYL ALCOHOL • FURIOIC ACID

When inquiring specify CP A5776 — see handy form pages 2-3

Materials

Non-Drying Plastic Seals, Caulks, Glazes Metal, Tile, Fabric, Glass

Watertight, acid-resistant material makes firm, pliable, all-purpose bond

Uses — Plastic seal for water, fume, air or electrical conduits or ducts of metal, tile or fibre, also soil pipe or glass block. As a glazing or caulking compound. For expansion or other structural joints; laying or pointing tile; cracks in floors under permanently wet or damp conditions; setting plumbing fixtures and sink strainers; caulking around doors and windows; sealing wooden joints; miscellaneous uses.

Features — Non-drying: retains its plasticity indefinitely; can be worked and shaped with ease, yet may be painted if desired. Available in white or deep brown. Does not stick to hands or "drag" on tools. Bonds firmly to practically any material, expanding and contracting with surface to which it adheres. Will hold low pressures. Watertight, fume-proof, acid resistant. Is not adversely affected by hot or cold weather or water. Contains no tars or asphalt.

Description — Ready for use; apply by hand or with knife. For perfect bond, have surface thoroughly clean. May be painted after it has set for 10 days, or at once if shellaced. One pound equals approximately 17 cu. in. Trade name: Cauxeal. One, 5 and 50 lb. containers.

X-PANDO CORPORATION, Dept. CP, 43-15 Thirty-sixth St., Long Island City 1, N.Y.

When inquiring specify CP A5777 — see handy form pages 2-3

★

Cellulose Derivative Serves as Sizing, Binding, Thickening Agent

Ethyl hydroxy ethel cellulose flakes make clear smooth solutions when stirred in cold water; offered in three viscosities

Uses — This water soluble, cellulose derivative is used as a film forming material, sizing agent, binder, thickening agent, preservative colloid in aqueous solutions and as an adhesive for paper and textiles. Typical of the products with which it may be used are: water emulsion paints, cosmetics, plastics, paper, food products, wallpaper adhesives, pharmaceuticals.

Features — Resistance to fats, oils and alkalies. It is neutral and free from odor; edible and non-toxic. Most non-volatile alcohols may be used as plasticizers for this product, — glycol, glycerine, and sorbitol. It is comparable with various thickening agents such as gelatin, pectin, methyl cellulose, hydroxy-ethyl cellulose, etc. Films are very flexible in unplastized state even when fillers are present. Such films are insensitive to most of the common solvents and oils.

Description — This derivative is obtained by etherfying high alpha wood pulp with a mixture of different etherfying agents. Depending on the desired properties of the products, the wood pulp can be pre-treated in order to increase the reactivity or to modify its properties. This material, known as "Ethulose" is supplied in white or slightly yellow flakes.

Clear, smooth solutions can easily be made by stirring the flakes in cold water. The temperature should be below 20° C. in order to obtain the best possible results. The speed with which complete solution is obtained depends on the stirring. Clear solutions are normally obtained with-

A natural wax that's a STAR PERFORMER

MALMSTROM WOOL WAX (LANOLIN)

available

in unlimited quantities

AT PRICES BELOW O.P.A. CEILINGS!

In these days of shortages you can depend on MALMSTROM to offer you fine U.S.P. and Technical Grades WOOL WAX (Lanolin) — and it's available in unlimited quantities at prices below O.P.A. Ceiling!

MALMSTROM'S WOOL WAX (Lanolin) will help to give your preparations unusual selling features because of these outstanding advantages —

- A NATURAL WAX, absolutely free from glycerides.
- EXCEPTIONALLY ADHESIVE, clinging to surfaces with unusual tackiness, and affording a better protective coating with the retardation of rusting. Because of its clinging and protective features it was used extensively during the war to protect ordnance from rust.
- IMPROVES EMOLLIENT PROPERTIES OF FINISHED PRODUCT. Forms stable water-in-oil emulsions with 200% of water.
- EASILY SULPHURIZED AND PHOSPHORIZED for lubrication additives.



Write for methods of incorporating MALMSTROM'S WOOL WAX (Lanolin) into your preparations. Samples and prices upon request.

N. I. MALMSTROM & CO.

America's Largest Processor of Wool Fat & Lanolin
147 LOMBARDY STREET, BROOKLYN 22, N. Y.
30 W. WASHINGTON STREET, CHICAGO 2, ILL.
Office and Warehouse

When inquiring specify CP A5778 — see handy form pages 2-3

Materials

in one hour. While it is important that the solution be prepared at 20° C. or below, it can afterward be used at higher temperatures. When a solution of "Ethulose" is heated to 50-60° C. it is converted into a thixotropic gel, provided that the concentration is sufficient (3% or higher). At lower concentration simple flocculation takes place. The gelation temperature is strongly affected by the presence of anions, Chloride and sulphite ions decrease the gelation temperature. At high salt concentrations, a simple flocculation takes place even at room temperature. At present available in three viscosity ranges: A— 25-60 cps; B — 100-200 cps; C — 500-1000 cps. (Viscosity of a 2% aqueous solutions at 20° C.) Each viscosity type can be diluted up to about 30% with alcohols, such as methanol or ethanol, thus obtaining a lower freezing point. The standard product as offered in the three regular types may be modified to meet special requirements and a higher viscosity type will soon be available.

GEORGE G. JOHNSTON CO., Dept. CP, 865 First Ave., New York 17, N. Y.

When inquiring specify CP A5779 — see handy form pages 2-3

★

Plastic Resin Corrosion-Proofs Exposed or Submerged Surfaces

Hard-drying, brush-applied coating protects processing vats, floors, equipment to 212° F.

Uses — Hard-drying, plasticized resin coating for corrosion-proofing exposed and submerged metal or masonry surfaces against strong caustics, alkalis and acids in chemical and processing plants. Used on tanks, floors, structures and equipment subject to fumes or direct contact with corrosive liquids. For concrete, brick or metal floors, piping, ducts, vats and tanks, dryer trucks and trays, conveyors, tank cars and trucks, storage tanks, centrifuges and battery boxes, also structural steel. Successfully resists cleaning agents and the corrosive acids of refrigerants and processing operators.

Features — Brush-applied for air drying. Especially formulated for tank interiors and other submerged surfaces. Resists most "troublesome" chemicals including oleic, nitric, acetic and sulphuric acids, sodium hypochloride, pickling, plating and bleach solutions and refrigerants. Also hydrofluoric, lactic, muriatic and phosphoric acids, chlorine, cyanides, formaldehyde, salt solutions, sodium hydroxide, sulphur dioxide, caustic soda, calcium chloride, tri-sodium phosphate, escaped flue gases, fruit and vegetable juices, lubricating oils. For temperatures 125° to 212° F., and for submerged surfaces at temperatures above atmosphere, use "HT" solution (see below).

Description — Product name: Acid Causticbond and Acid Causticbond HT. Available in clear, black and five other colors. Clear is recommended for submerged surfaces or where corrosive conditions are especially severe. Apply to clean, dry surfaces. Two or three coats insure adequate coverage. One and five gallon cans or 55 gal. drums. Do not expose to chlorinated solvents such as carbon tetrachloride, aromatic hydrocarbons and solvents such as benzene, naphthalene, xylene, etc.; or to hot oxidizing agents including chromic acid and dehydrated compounds such as acetic anhydride and glacial acetic. Complete technical data sent on request.

THE WILBUR & WILLIAMS CO., Dept. CP, Park Square Bldg., Boston, Mass.

When inquiring specify CP A5780 — see handy form pages 2-3

FEATURED CHEMICALS in the PFIZER FAMILY

no. 3 in a series:

The OXALATES

Here is a chemical "family within a family" — the Pfizer Oxalates. Among its members are Ammonium Oxalate, Potassium Oxalate, Iron Oxalate, Iron and Ammonium Oxalate and Iron and Sodium Oxalate.

In connection with each of these products, bear this in mind. Each is a worthy member of a larger family — one of more than a hundred Pfizer products. That means a near-century background that has always been a quality background . . . a high degree of physical uniformity and purity . . . the kind of reliability which can only be assured by such essentials as accurate control, modern equipment, ample capacity, technical skill and trained personnel throughout the organization.

Chas. Pfizer & Co., Inc., 81 Maiden Lane, New York 7, N. Y., 444 West Grand Avenue, Chicago 10, Ill.; 605 Third Street, San Francisco 7, Cal.

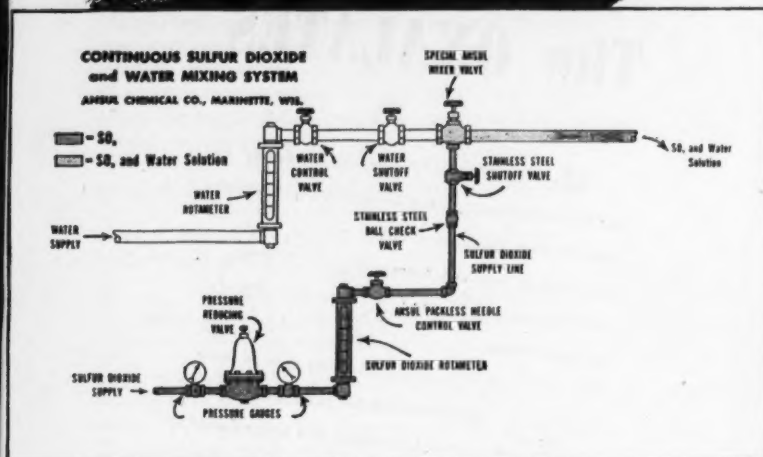
- ✓ Ammonium Oxalate
- Ascorbic Acid
- Bi-Cap Flour Enrichment Mixtures
- Bismuth Preparations
- Calcium Gluconate
- Citric Acid
- Citrate Esters
- Cream Tartar
- Fumaric Acid
- Gluconic Acid
- Glucono Delta Lactone
- Iron and Ammonium Citrates
- ✓ Iron and Ammonium Oxalate
- Iron Gluconate
- ✓ Iron Oxalate
- Itaconic Acid
- Niacin
- Niacinamide
- ✓ Oxalates
- Penicillin
- Potassium Iodide
- ✓ Potassium Oxalate
- Riboflavin
- Rochelle Salt
- Sodium Citrate
- Sodium Gluconate
- Tartaric Acid
- Thiamine

—and many other chemicals

PFIZER

Manufacturing Chemists Since 1849

A SIMPLE WAY TO MAINTAIN A Constant SO₂ Concentration DEVELOPED BY ANSUL TECHNICAL STAFF



● Pre-mixing of water and liquid SO₂... accomplished through the use of meters and a single, Ansul-designed valve installed at the juncture of the water and SO₂ supply lines... permits constant control of the H₂SO₃ at any desired concentration.

If you have need for an SO₂ mixing system for a specific application in your business, Ansul technicians will plan one for you.



PHYSICAL PROPERTIES

Chemical formula.....	SO ₂
Molecular weight.....	64.06
Color (gas and liquid).....	Colorless
Odor.....	Characteristic, pungent
Melting point.....	-103.9° F. (-75.5° C.)
Boiling point.....	14.0° F. (-10.0° C.)
Density of liquid at 80° F.....	(85.03 lbs. per cu. ft.)
Specific gravity at 80° F.....	1.363
Density of gas at 0° C. and 760 mm.....	2.9267 grams per liter (0.1827 lb. per cu. ft.)
Critical temperature.....	314.82° F. (157.12° C.)
Critical pressure.....	1141.5 lbs. per sq. in. abs.
Solubility.....	Soluble in water
Purity.....	99.94% (by wt.) SO ₂ (H ₂ O less than 0.01%)

*REG. U. S. PAT. OFF.



Send for your copy of "Liquid Sulfur Dioxide"—a treatise on the properties, characteristics, and industrial uses of Liquid Sulfur Dioxide—written by the Ansul Technical Staff.

Also Manufacturers of Methyl Chloride

ANSUL CHEMICAL COMPANY
INDUSTRIAL CHEMICALS DIVISION, MARINETTE, WIS.
Eastern Office: 60 E. 42nd St., New York City

When inquiring specify CP A5781 — see handy form pages 2-3

Materials

Adding Rubber To Wax Improves Insulating, Impregnating Compound

*Adhesion, waterproofing, flexibility
enhanced*

Uses — For waterproofing, insulating and impregnating. By the addition of synthetic rubber the adhesive, waterproofing and flexibility characteristics of the wax are enhanced.

Features — Pliable, ductile; does not chip off. High electrical resistance. Water-resistant.

Description — The compound is a processed combination of synthetic rubber and micro-crystalline wax. ASTM melting point is 163° F. Flash point 465° F., Fire Point, 530° F. Cold flow — no evidence of flow after six hours. Specific gravity at 60° F. 0.9438 — 212° F. 0.7812. Data sheet and additional information on request concerning Vista-wax Compound. Wax rubber mixtures to individual requirements are available.

CANTOL WAX CO., Dept. CP, 211 N. Washington St., Bloomington, Ind.

When inquiring specify CP A5782
— see handy form pages 2-3

Tri-Core Solder Reduces Soldering Time

*Faster soldering permitted by three
consecutive steps in the soldering
temperature cycle*

Uses — For fast soldering.

Features — This solder speeds up production by three consecutive steps in the soldering temperature cycle. (1) Flux application at the beginning of the temperature cycle with flux action intact. (2) Immediate take of the solder over the fluxed surface on the rise of the temperature cycle. (3) Quick cooling because the "take" of the solder is accomplished before the peak of the temperature cycle is normally reached.

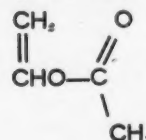
Description — Three individual flux filled cores assure continuity of production. Empty flux sections are precluded and production slowdowns are prevented. Lower cost to the consumer is possible because the tri-core manufacture permits the use of less tin. Further information may be requested.

ALPHA METALS, INC., Dept. CP, Tri-Core Division, 369 Hudson Ave., Brooklyn 1, N. Y.

When inquiring specify CP A5783
— see handy form pages 2-3

UNPOLYMERIZED VINYL ACETATE

(STABILIZED)



Boiling Range 71.8° to 73° C.

Vinyl Acetate can be polymerized to form resins with exceptional bonding qualities for wood, glass, metal and fibre

Containers:—

410 lb. drums; 62,500 lb. tank cars
For further information write to:



When inquiring specify CP A5784 — see handy form pages 2-3

CLIFTON PRODUCTS INCORPORATED



Manufacturers of

BERYLLIUM COMPOUNDS

**BERYLLIUM OXIDE,
Refractory Grade, Fused**

BERYLLIUM OXIDE, Metal Grade

BERYLLIUM OXIDE, Fluorescent

BERYLLIUM SULPHATE

BERYLLIUM STEARATE

MINOR BERYLLIUM CHEMICAL SALTS

**Works and Office
PAINESVILLE, OHIO**

When inquiring specify CP A5785 — see handy form pages 2-3

Materials

Firemaster Seals Refractory Walls, Leaves No Foothold For Slag

*Recommended for gas, oil, coal-burning kilns, lehrs
and casting furnaces*

Uses — Imparts tough, glassy, continuous interior surface to unprotected refractory walls, plugging open pores and joints for prolonged periods. Can be used in furnaces burning gas, oil, hard or soft coal, coke, powdered fuel, coke breeze or wood. For boiler, heat treating, marine boiler, slab heating and forging furnaces; soaking pits, annealing ovens, casting furnaces, lehrs, kilns. Manufacturer recommends for large or small furnaces, high or low temperatures, continuous or intermittent operations.

Features — Unprotected pores and joints in refractory walls leave footholds where slag gathers. Since slag and brick have different expansion coefficients, cracks are formed in this manner. Firemaster coats refractory walls with a glass-like, seamless monolithic lining which leaves no foothold for slag, reflects heat back into furnace rather than allowing it to escape through unsealed air-leaks. Also prevents infiltration of gases from without. Furnace may be operated at normal temperatures immediately after applying. Application by spraying or paint brush, 1/16" coating. Prevents spalling. Greatly reduces brickwork maintenance. Improves combustion and economy, gives greater BTU output. Prolongs refractory life, less expensive than wall repair jobs. This material may be used on any refractory wall exposed to temperatures from 1200 to 3000 degrees F.

Description — Fuses under heat at regular furnace operating temperature. Furnace should be fired immediately after applying. Packed in 5-gallon cans, ready to use. One gallon covers 30-35 square feet. Slagged or dirty walls must first be scraped or wirebrushed. Made in variations vitrefying from 1000 to 3000 degrees F. Write for Bulletin No. 463.

GAMLEN CHEMICAL COMPANY, Dept. CP, 1469
Spring Garden Ave., Pittsburgh 12, Pa.

When inquiring specify CP A5786 — see handy form pages 2-3

★

Cement for Linoleum is Rust and Corrosion Resistant

*Unaffected by heat and cold and does not
become brittle with age*

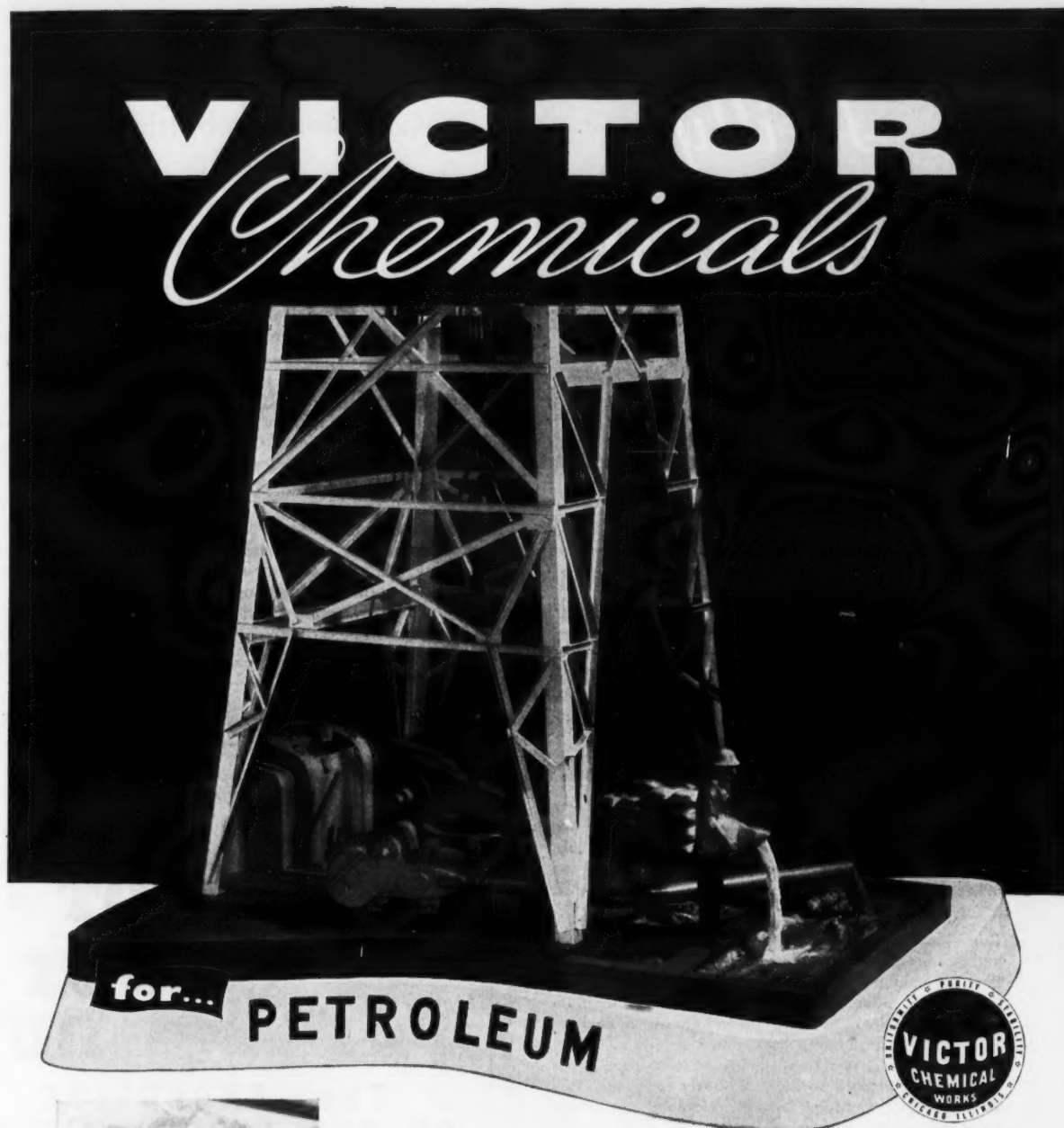
Uses — In the cementing of linoleum and materials such as Linotile to counter tops and floors back of counters and in cementing canvas to concrete floors and airing decks.

Features — When applied to steel surfaces it will prevent rust. Unaffected by water, moisture, heat or severe cold, it does not become brittle with age. Actual tests, when applied to steel, showed no deterioration of this material or rust or corrosion of metal when submerged in salt water 22 months nor when exposed to live steam for 24 hours.

Description — The product comes in trowling consistency and is applied with a linoleum spreader. Of an oil base nature, it contains no alcohol or water soluble ingredients. Descriptive literature is available on request.

DOLPHIN PAINT AND VARNISH COMPANY, Dept.
CP, 944 Champlain St., Toledo 3, Ohio.

When inquiring specify CP A5787 — see handy form pages 2-3



VICTOR
Chemicals

for... **PETROLEUM**

VICTOR
CHEMICAL
WORKS



In the drilling of oil wells special muds are employed to cool and lubricate the drill bit, prevent cave-ins, hold back tremendous gas pressures and other purposes. Good drill mud must be sufficiently fluid to pump easily, yet capable of building thin, impermeable walls. It should be viscous, yet fluid enough to drop out rock cuttings in the mud pits. To control the viscosity of drill mud, chemicals are usually added . . . sodium phosphates as thinners, powdered ferrophosphorus to increase weight. Both chemicals are produced by Victor. Other Victor chemicals used in oil well drilling and petroleum refining include: **Alkyl Phosphates** (oil additives, stabilizers for gasoline), **Ferrophosphorus** (weighting drill mud), **Phosphoric Acid** (refining oil and gasoline), **Sodium Acid Pyrophosphate**, **Sodium Tripolyphosphate**, and **Tetrasodium Pyrophosphate** (conditioning drill mud), **Tripotassium Phosphate** (purifying gasoline).

VICTOR CHEMICAL WORKS 141 W. Jackson Blvd., Chicago 4, Ill.
NEW YORK • KANSAS CITY • ST. LOUIS • NASHVILLE • GREENSBORO, N. C.
Plants: NASHVILLE • MT. PLEASANT, TENN. • CHICAGO HEIGHTS, ILL. • VICTOR, FLA.

When inquiring specify CP A5788 . . . see information request blank, pgs. 2-3

Reilly ALUMINUM COATING

HEAT REFLECTING
SURFACE PROTECTING
BEAUTIFYING

★ for
★ TANKS
★ TOWERS
★ STACKS
★ METAL BUILDINGS

Reilly Aluminum Coating combines, in a one-coat job, the corrosion-resisting properties of coal tar with the attractive appearance and heat-reflecting property of aluminum.

The aluminum pigment used in this coating is the highest quality aluminum powder. This powder is thoroughly milled into the coal tar base, and floats to the surface after application, where the aluminum particles interlock to form an additional protective shield. This bright aluminum shield serves to deflect the sun's rays, resulting in lower temperatures as compared with dark surfaces similarly exposed. This is a distinct advantage for tank plates within which volatile materials are stored.

Reilly Aluminum Coating is available in one and five gallon cans and 50 gallon drums.

REILLY TAR & CHEMICAL CORPORATION

Merchants Bank Bldg.,
500 Fifth Ave.
2513 S. Damen Ave.

Indianapolis 4, Indiana
New York 18, N. Y.
Chicago 8, Ill.

17 Plants • 24 Sales Offices • To Serve The Nation



When inquiring specify CP A5789 — see handy form pages 2-3

Materials

Nickel Steel Tubing Resists
Corrosion; Embrittlement
At — 0°

Withstand rigorous service in chemical, paper industries; perform well in alkaline-phenol solution work

Uses — Extensively used in chemical and paper industries. A number of installations of tubing have been made in black liquor recovery units in pulp and paper mills. They have also been found satisfactory for the usual evaporator installations in these mills. They have been advantageous in handling of crude oils containing substantial proportions of salt water and hydrogen sulphide in the oil well fluid. These alloys meet requirements in oil de-waxing operations and other processes involving the use of refrigeration.

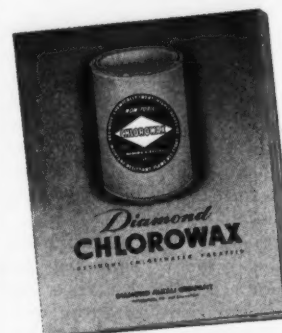
Features — The 3½ and 5 percent nickel alloy steels offer resistance to certain types of corrosion in alkaline media and resistance to embrittlement at sub-zero temperatures. They may be used at temperatures as low as minus 150 degrees F without dangerous embrittlement. Number 9 answers pressure tubing needs of plants handling liquified gases or other low temperature fluids, exhibiting good physical properties even at temperatures as low as minus 320 degrees F.

Description — "Nicaloy" is the trade-mark for this recently developed straight nickel steel tubing now offered in three types designated as 3½, 5 and 9. These three are

Get this Informative New Bulletin on

CHLOROWAX

RESINOUS CHLORINATED PARAFFIN



- ← for Interior and Exterior Paints
- ← for Wood Impregnation
- ← for Textile Coatings
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- ← for Many Other Uses

This revised bulletin contains new tables, charts and other data pertinent to the use of Chlorowax in your formula. Write for your copy today.

DIAMOND ALKALI CO. 
PITTSBURGH 22, PA., AND EVERYWHERE

When inquiring specify CP A5790 — see handy form pages 2-3

BARECO Microcrystalline WAX

NOT a By-Product

NOT a Side Line

BUT....

The EXCLUSIVE and ONLY Product OF OUR LARGE REFINERY AT BARNSDALL, OKLA.

Yes, the ever-growing demand for our Be Square and Victory Microcrystalline Waxes has necessitated our converting our entire Barnsdall Refinery to the manufacture of these outstanding products.

Although microcrystalline waxes have been one of our major products for many years, and have become standard over the world, their applications have become so extensive and important to the many users, that we now find it advisable to discontinue the manufacture of all other petroleum products at Barnsdall, and to devote our entire facilities and activities to microcrystalline wax production.

Bareco Waxes, in other words, are now, more than ever, made "on purpose" — thus eliminating the usual variables in quality and supply so often found in by-product waxes. Bareco Waxes are uniform — their production is constant, because . . . WAX IS OUR BUSINESS!

Buy Bareco Waxes with Confidence! They are made "On Purpose"!

BARECO OIL COMPANY

BOX 2009
TULSA, OKLAHOMA



WIDENER BLDG.
PHILADELPHIA 7, PA

Samples of Be Square and Victory Waxes are available in a wide range of hardnesses, colors and melting points.

When inquiring specify CP A5791 . . . see information request blank, pgs. 2-3

CHEMICAL REVIEW

Materials

designed for similar applications, the higher alloys being suitable for the more rigorous service. Properties of 3½ and 5 are similar, the selection of one or the other depending upon the relative severity of conditions. Minimum tensile properties are specified as follows: tensile strength, 60,000 psi; yield point, 30,000 psi; elongation, 30 per cent in 2 inches. Number 9 was developed primarily to meet tubing requirements for handling liquified gases. It is suitable for use as tubing for black liquor and caustic soda solution evaporation and for alkaline-phenol solution work. Minimum tensile properties of the tubing are specified as follows: ultimate strength, 80,000 psi; yield strength 50,000 psi; elongation, 29 per cent in 2 inches.

The company states that these three analyses do not necessarily conclude the Nicaloy series, as further analyses will be added if found satisfactory for use and production.

BABCOCK & WILCOX CO., Dept. CP, 85 Liberty St., New York 25, N. Y.

When inquiring specify CP A5792 — see handy form pages 2-3

★

Calgon Cuts Corrosion and Scale In Coils, Pipes and Boilers

One pound per 60,000 gallons adds 90% to life of iron, steel, zinc, aluminum

Uses — Effective in preventing boiler scale, deposits and corrosion in steam boilers, pipes and heater coils. Widely used in oil refineries, distilleries and breweries, hospitals, institutions. Applicable to textile, leather and food industries. Used in more than 600 municipal water plants.

Features — Greatly reduces rate of metal corrosion. Slightly more than one pound in 60,000 gallons water reduces corrosion rate of iron and steel as much as 90%. Zinc and aluminum react similarly, manufacturer states. Treatment is simple, economical. Harmless in drinking water. Made from food-grade materials. Alleviates troubles of air conditioning systems.

Description — Vitreous sodium phosphate, formerly known as sodium hexametaphosphate. Trade name: Calgon. Properties: adsorption on surface of metals, their salts and oxides. While other materials are readily adsorbed from water solutions, manufacturer says Calgon is adsorbed almost quantitatively from very dilute solutions of the order of 1 ppm. or less, and that result of adsorbed Calgon film on metallic salts and oxides is a much reduced corrosion rate plus other factors. For example, in well water which contains iron, exposure of the water to air or its chlorination will cause oxidation and precipitation of the iron as red iron oxide. Only previous method was to aerate water, thus causing oxidation, then filter off resulting precipitate. Due to adsorption of Calgon on iron oxide, when two parts Calgon are added to each part of iron, iron no longer precipitates and water requires no further treatment. Deposits and discoloration will no longer occur. Also eliminates trouble caused by common metallic salt, calcium carbonate. Present in the solution as calcium bicarbonate, heating decomposes the salt, and calcium carbonate is deposited on heated surfaces in form of scales. Treatment of one pound Calgon to 100,000 gallons water prevents such formation, even in very hard water at temperatures of 80-90 degrees C. Such applications are called "Threshold Treatment" due to small amount of material used.

CALGON, INC., Dept. CP, 323 Fourth Ave., Pittsburgh 22, Pa.

When inquiring specify CP A5793 — see handy form pages 2-3

to make a Slick Chick SLICKER!



When luxurious smoothness is important to a product, CSC butyl stearate's lubricating properties make it a preferred ingredient. In lipstick, bath oil, vanishing cream, nail polish, and many other cosmetics, butyl stearate is an ideal lubricant and solvent.

The same characteristics that help make a lady lovely give butyl stearate many industrial applications—in special lubricants for metal to metal contacts, and in the textile and molding fields. It

is used as a plasticizer for laminated fiber products, modified rubber, and special lacquers. As a waterproofing agent, it is readily applicable to materials ranging from cloth to cement.

CSC butyl stearate can help make familiar products better, and new products possible, wherever its versatile combination of lubricating, solvent, plasticizing, and waterproofing properties can be applied. Just ask our sales representative to call.



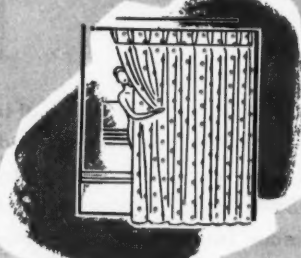
For cosmetics



For waterproofing



For special lubricants



For plasticizers



For textile lubricants

COMMERCIAL SOLVENTS
Corporation

17 East 42nd Street, New York 17, N. Y.

When inquiring specify CP A5794 . . . see information request blank, pgs. 2-3

FOR PRECISION CONTINUOUS BLENDING OF FLUIDS...

AGAINST PRESSURES UP TO

5,000 LBS./IN²

NEW!



HEAVY-DUTY

Wilson
PULSAFEEDER
Chemical Proportioning Pumps

Designed for the particular needs of industrial process blending of fluids, this new direct-drive Pulsafeeder proportioning pump offers singular advantages. *Hydraulically-balanced diaphragm head* isolates piston and cylinder from fluids being pumped, eliminates need for packing glands, prevents contamination of product by pump, lubrication or packing; protects pump from corrosion or attack by fluid being pumped.

Box-type construction provides *sealed-in* lubrication, with all moving parts (except motor) running in an oil bath. Rate of flow *continuously adjustable while machine is in operation* by hand wheel, from zero to full maximum. Largest unit has maximum pumping rate of 800 gallons per hour. Literature and specifications on request. *Process Equipment Division, Lapp Insulator Co., Inc., 173 Maple St., LeRoy, N. Y.*

Lapp

Process Equipment

LAPP CHEMICAL PORCELAIN VALVES • PIPE • RASCHIG RINGS...
WILSON PULSAFEEDER CHEMICAL PROPORTIONING PUMPS...

When inquiring specify CP A5795 . . . see information request blank, pgs. 2-3

Materials

Use Cacao Pods as Plastic Filler In Place of Walnut Shell Flour

Pulverized material acts as insecticide spreader and diluent; cleans, polishes; has wide filler useage

Uses — Product has great versatility as (1) a diluent and spreader for insecticides, fungicides, etc.; (2) a filler for molded plastics, linoleums, plywood adhesives; (3) an ingredient for fur cleaning compounds, floor sweeping preparations; (4) a polishing agent for machine castings and (5) a filler for wallboard and many structural compositions. A new process development which minimizes fat level in this material opens way for its use in many industries.

Features — Economical. Reacts quite well as a substitute filler for walnut shell flour and wood flour in plastics. As a diluent and spreader for insecticides and fungicides, it can replace both inorganic fillers such as talc and pyrophyllite and organic fillers such as walnut shell and wood flour. As an insecticide diluent, it apparently contributes a synergistic toxic effect to the poison ingredients. It is not known as yet whether this is merely due to an appetite attraction which causes pests to eat the toxic agent or if there is naturally occurring material toxic to insects in the shells themselves. There is possibility that the theobromine and caffeine content may have some effect on the killing properties.

Description — Product consists primarily of pulverized cacao pods. Available in unlimited quantities. Detailed information and samples on request.

GENERAL FOODS CORPORATION, RESEARCH & DEVELOPMENT DEPT., Section 23, Dept. CP, 250 Park Ave., New York 17, N.Y.

When inquiring specify CP A5796 — see handy form pages 2-3

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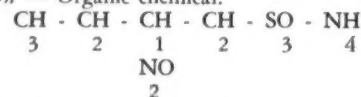
Predict Wide Intermediate Use of Aliphatic Nitro Sulfonates

Foresee adaptation to synthesis of detergents, dyes, pharmaceuticals, emulsifying agents

Uses — Ammonium-2-Nitrobutane-1-Sulfonate is the first of a series of aliphatic nitro sulfonates which, it is believed, will find wide usage as chemical intermediates in the synthesis of pharmaceutical, dyes, detergents and emulsifying agents.

Features — Nitro sulfonates are easily reduced to the amino sulfonic acids, which are higher homologs of taurine. Tertiary hydrogen on the beta carbon atom is highly reactive and can be replaced by a wide variety of reagents. Thus, it offers means of introducing this versatile group as a side chain on various nuclei to give new drugs of a more soluble type. May also be coupled with diazo compounds to introduce the solubilizing sulfonate group, thereby avoiding direct sulfonation on the nucleus.

Description — Organic chemical.



Additional information mailed on request.

THE VISKING CORPORATION, Dept. CP, 6733 W. 65th St., Chicago 38, Ill.

When inquiring specify CP A5797 — see handy form pages 2-3

CHEMICAL PREVIEW

Materials

Acetonitrile is Versatile Solvent, Extraction Medium and Synthesizer

*May be used as starting material for pyrimidines,
other organic compounds*

Uses — Acetonitrile may be used as a starting material for synthesis of many organic compounds such as acetamide, pyrimidines, thiamin chloride, naphthalene acetic acid, naphthalene acetamide, ethylamine, diacetamide, triacetamide, acetophenone. It reacts with hydrochloric or other halogen acids to form addition products. Can be used as solvent or extraction medium for cellulose esters, celluloid, collodion, lacquers, alkaloids and the fatty acids.

Features — Distills without decomposition and forms constant boiling mixtures with most solvents. With water, its constant boiling mixture contains approximately 84% Acetonitrile and 16% water boiling at 76° C. It is miscible with water, methyl and ethyl alcohol, carbon tetrachloride, acetamide, methyl and ethyl acetate, ethylene dichloride, ethyl ether, acetone and most unsaturated hydrocarbons. Will dissolve many inorganic salts and will form addition products with many of them, especially with metallic halides. Available in tank cars or carloads.

Description — A clear, colorless liquid, commonly known as Methyl Cyanide or Ethylnitrile. Stable, and may be stored in steel containers. Due to its high vapor pressure, it will evaporate rapidly. Will hydrolyze in presence of mineral alkalis or acids. B.P. 81.6° C., V.P. 50.2 mm. Hg. 20° C., freezing point —44° C., surface tension 29.10 dynes/cm. 20° C., specific heat 0.541 g. cal./g./C., refractive index 1.3459 16° C., heat of fusion 2130 cal./g., mol. heat of combustion —304 cal., viscosity 0.00359 g./cm. sec. 25° C., dielectric constant 38.8 20° C. Literature mailed on request.

NIACET CHEMICALS DIVISION, UNITED STATES
VANADIUM CORPORATION, Dept. CP, P.O. Box 807,
Niagara Falls, N. Y.

When inquiring specify CP A5798 — see handy form pages 2-3

★

Charts Describe Plastic Coatings For Corrosion Control

Comprehensive eight-page technical bulletin presents reference charts on industrial plastic coatings for corrosion and contamination control. Charts cover properties, application and industrial uses, plus a guide to ordering proper quantities. Coatings are briefly described, along with respective properties, resistance and limitations. Surface preparations for steel, concrete and wood are included, also application, thinner, cleaner, and cost per square foot. Six different coatings are listed for various uses such as sewage gases; mild acids, alkalis and salts; strong alkaline conditions; general maintenance; strong acids, and strong caustic and concentrated salts up to 230 degrees F. Chart on industrial uses covers bottling, dairy, brewing, chemical, food, marine, paper, petroleum, photographic, plating, textile, synthetic fibre manufacturing, transportation, wine and distilling industries, also public works, sewage and water works installations. Write for Amercoat Coating Comparison Chart.

AMERCOAT DIVISION, AMERICAN PIPE AND CONSTRUCTION Co., Dept. CP, Box 3428, Terminal Annex, Los Angeles 54, Calif.

When inquiring specify CP A5799 — see handy form pages 2-3

NOVEMBER-DECEMBER 1946

GENERAL CHEMICAL RESEARCH ANNOUNCES

genetron*

100

First of its
important series of
ALIPHATIC ORGANIC
FLUORINE COMPOUNDS

Long the leader in development of inorganic fluorides and fluoborates, General Chemical Fluorine Research now enters the field of organic chemistry as it presents the *Genetrons* . . . an important series of aliphatic organic fluorine compounds.

First of the group is *Genetron 100*, a product significant not only as a new industrial chemical, but also as the parent compound for this family of commercially valuable organic fluorine derivatives.

Its physical properties point to various applications . . . as a refrigerant; intermediate in the preparation of aerosol dispersants, dielectrics, high pressure lubricants, selective solvents, and mixed olefinic halide monomers. Some of these uses are already being confirmed by manufacturers who recognize the unusual industrial potentialities of this low-boiling organic liquid.

Genetron 100 may merit your thorough investigation, too. For experimental samples write General Chemical Company, Fluorine Division, 40 Rector Street, New York 6, N. Y.

BASIC CHEMICALS



FOR AMERICAN INDUSTRY

GENERAL CHEMICAL COMPANY

40 RECTOR STREET, NEW YORK 6, N. Y.

Sales and Technical Service Offices: Albany • Atlanta • Baltimore
Birmingham • Boston • Bridgeport • Buffalo • Charlotte
Chicago • Cleveland • Denver • Detroit • Houston • Kansas City
Los Angeles • Minneapolis • New York • Philadelphia • Pittsburgh
Providence • San Francisco • Seattle • St. Louis • Wenatchee
Yakima (Wash.)

In Wisconsin: General Chemical Wisconsin Corporation,
Milwaukee, Wis.

In Canada: The Nisole Chemical Company, Limited
Montreal • Toronto • Vancouver

*Trade Mark, General Chemical Company

genetron* 100

PHYSICAL PROPERTIES

Formula	CH ₂ CHF ₂
Molecular Weight	66.05
Color	Colorless
Melting Point	—117.0° C
Boiling Point	—24.7° C
Density	1.004 at —25° C
Latent heat of vaporization	137 B.t.u./lb.

vapor pressure (p.s.i. abs)

—30° C	12.0
—10° C	25.9
10° C	53.8
30° C	108.0

When inquiring specify CP A5800 . . . see information request blank, pgs. 2-3

INSTRUMENTATION AIDS PENICILLIN PRODUCTION

One phase of penicillin production by the bulk fermentation process. (Photograph courtesy of Chas. Pfizer & Co.)

Instruments



Nine-point recorder shows temperature and vacuum at a glance.

USES — Standard type recorders are used to indicate and record temperatures and vacuum in the drying equipment employed in the production of penicillin.

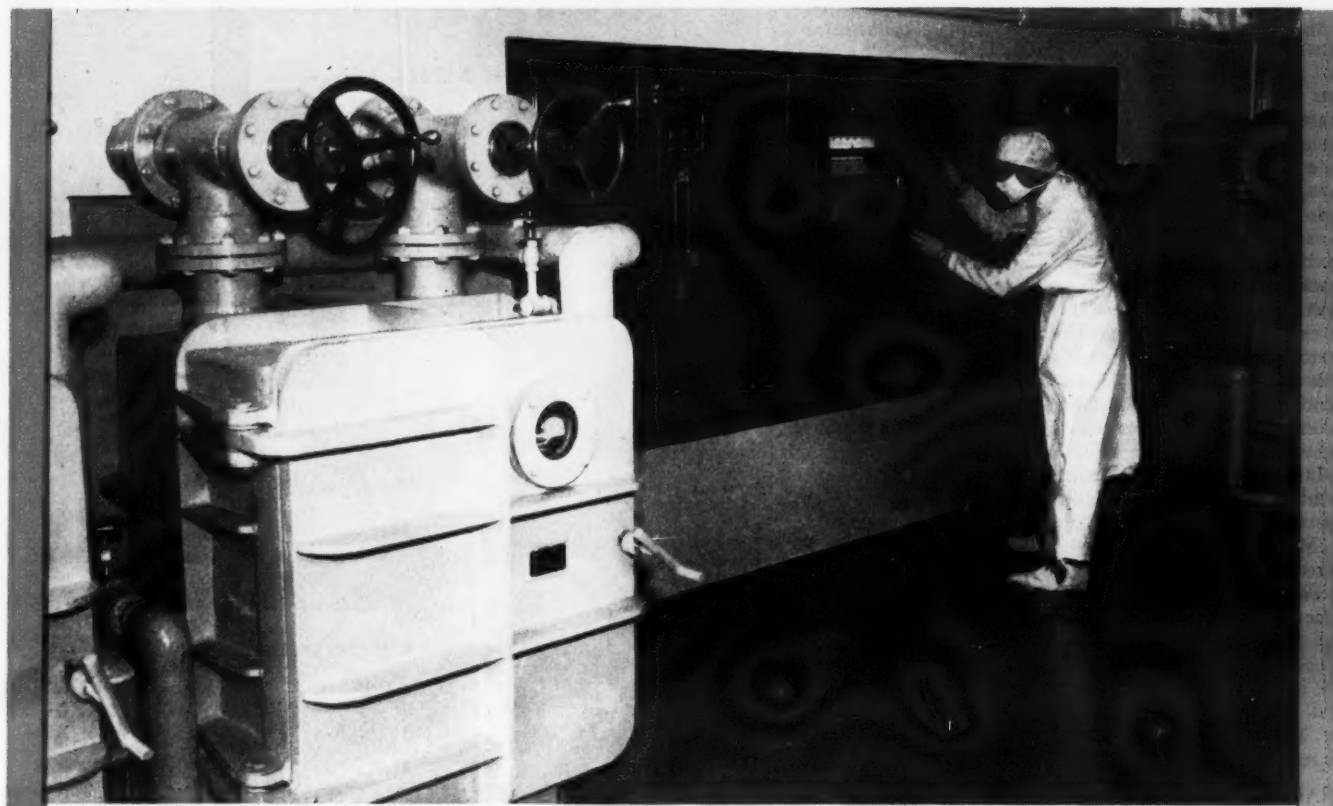
Features — Temperature measurements are made with speed and accuracy thus permitting the operator to hold the temperatures within a narrow band.

Description — Since the penicillin salt is very unstable, removal of water must be performed at extremely low temperature. Temperatures must be held within a very narrow band. Vials of frozen penicillin are placed into the dryers, one of which is shown in the left foreground of the illustration. In the early stages of the drying process the absolute pressure is in the order of 100 microns, although at the end, when the material is practically dry, it will drop to a few microns.

Water circulates through small monel-metal pipes inside the dryer. Miniature thermocouples in the pipes detect the temperature of the water in each of three dryers and report it to the temperature recorder, where the process operator can see it on the control panel. A glance at this 9-point recorder, with a range of from -80 to $+160$ F. shows a separate, easily read record for each of six dwarf-size couples, and gives the operator visible proof of the slightest temperature changes. Vacuum is also recorded in each of the dryers, using a vacuum cell as a detector. More details on this installation and the use of indicating, recording, and control equipment are available from the manufacturer.

LEEDS & NORTHRUP COMPANY, Dept. CP, 4901 Stenton Ave., Philadelphia 44, Pa.

When inquiring specify CP A5801 — see handy form pages 2-3



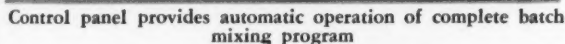
Batch Mixing Controlled Automatically

Interlocks protect against sticking dump valve

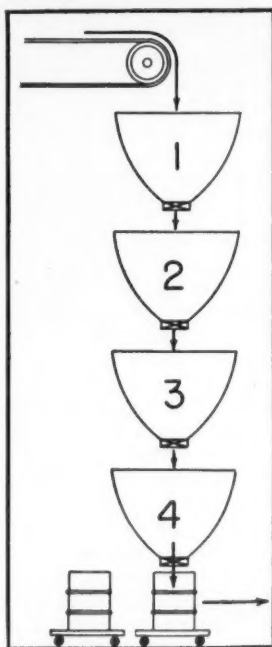
USES — This Control system provides automatic operation of a complete batch mixing program. Developed for a food processing plant the system has application in many processing operations where batch mixing is employed.

Features — Interlocking protection is provided in the event of a sticking dump valve, in which case the timer immediately stops and a signal light comes on. Operation will continue when the valve is released and takes either a full open or shut position. In order to free any material which may adhere to the lips of the mixer after the contents have been emptied, a bumping operation, consisting of two rapid on-off movements of the solenoid dump valve is provided. Timers are interlocked so that neither timer may be operated unless the other timer is in the cycle completed position. Protection is provided to prevent filling of mixing kettles if dump valves are open.

Description — The control system is mounted in a dust-tight panel which included two cam timers, relays, selector switches, push buttons, indicator lights, fuse and terminal blocks. One timer automatically controls the loading cycle of four mixer kettles as follows: Mixer 1 — fills in two min., mixes for three min., dumps into mixer 2 in one min., refills and repeats; mixer 2 — mixes for three min., dumps into mixer 3 in one min., refills from mixer 1; mixer 3 — mixes for three min., dumps into mixer 4 in one min., refills from mixer 2; mixer 4 — mixes for three min. This loading cycle takes 20 minutes, at the end of which time all four mixers are full and the loading cycle timer stops. Upon manual selection at that time, the program is continued through further processing on either a batch or continuous basis and controlled automatically by the second or operate cycle timer. This cycle requires 6



minutes, and includes final discharge of the batch from mixer 4 to packaging, and co-ordinates the sequence of filling, mixing, and dumping operation in the complete process. While these operations are automatic, mixers may be filled or dumped manually by operating the selector switch to the hand position and pressing the respective push buttons. Signal lights indicate when line switch is closed, when feeder motor is running, when operating and loading cycles are taking place, and when valves are energized or do not function properly. More information may be secured on request.

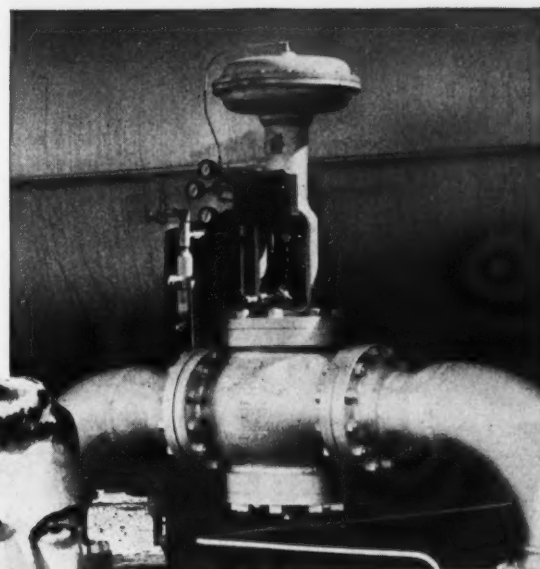


Flow sketch of mixers

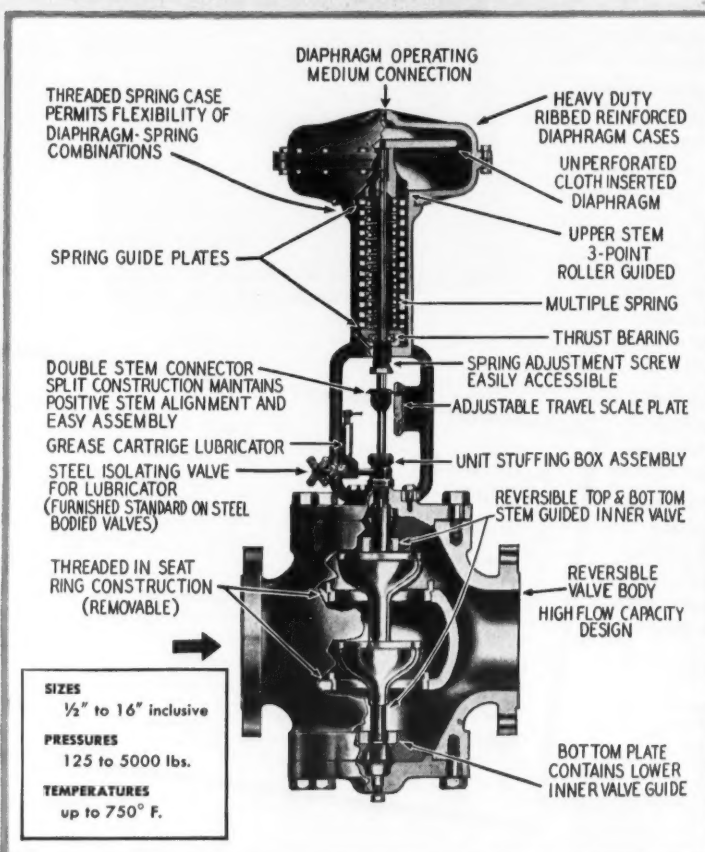
AUTOMATIC TEMPERATURE CONTROL CO. INC.,
Dept. CP, 34 E. Logan St., Philadelphia 44, Pa.

When inquiring specify CP A5802 — see handy form pages 2-3

...say instrument
men



McALEER TYPE H-86 DIAPHRAGM MOTOR VALVE



**TESTED...APPROVED AND
PREFERRED by leading re-
fineries and process plants**

McAlear Type H Diaphragm Valves with-
stand the toughest tests of temperature
and pressure known in the refinery, power
and process industries.

Rugged, dependable, precise—they are used in conjunction with instruments to control flow, temperature, pressure and liquid level—to handle air, gas, vapor, steam or liquid—in all types of process and piping systems.

For complete data on all McAlear Type H Motor Valves (and available special constructions), write for Bulletin 105. Address Climax Industries, Inc., McAlear Manufacturing Division, 1905 South Western Avenue, Chicago 8, Illinois.



McALEAR
PRESSURE • FLOW • LIQUID LEVEL • TEMPERATURE
controls
for STEAM, WATER, AIR, OIL-GAS

-When inquiring specify CP A5803 . . . see information request blank, pgs. 2-3

NEW!

... a 12 page bulletin fully describing
the many outstanding features of the
**BECKMAN IR2 INFRARED
SPECTROPHOTOMETER**

SEND FOR YOUR FREE COPY!

THE BECKMAN IR2 INFRARED SPECTROPHOTOMETER is making possible new analytical and control methods in many of today's industrial processes. Developed originally to simplify plant control methods in the refining of butadiene and aviation gasolines, Infrared equipment proved so valuable in saving time and stepping up the efficiency of plant processing operations that other industries wanted similar Beckman equipment for simplifying their analytical and control problems.

As a result of this widespread demand—and backed by the invaluable experience gained by Beckman engineers in building more Infrared Spectrophotometers than all other makes combined—the Beckman IR2 Spectrophotometer was developed. This instrument, besides embodying the advancements of the original Beckman Infrared instrument, incorporates other advancements that extend the advantages of infrared analytical and control methods to much broader fields of application.

The Beckman IR2 Infrared Spectrophotometer is years ahead of any other infrared equipment because into its design Beckman engineers have incorporated the ideas, user-suggestions and first-hand experience gained from the long period of pioneer work in butadiene and 100-octane applications—two of industry's greatest war-time achievements. To enable you to fully understand the really important advancements incorporated into the IR2, a new twelve page Beckman Bulletin has been issued describing the IR2 in detail. A copy of this Bulletin will gladly be sent you on request. Write today while ample supplies are available. Beckman Instruments, National Technical Laboratories, South Pasadena 11 Calif.

BECKMAN

INSTRUMENTS CONTROL MODERN INDUSTRIES



**A FEW OF THE IR2 ADVANCEMENTS
DESCRIBED AND ILLUSTRATED IN THIS BULLETIN**

MAXIMUM VERSATILITY: Illustrations and descriptive matter show how the IR2 handles liquid and solid samples, as well as gases... how its light sources, cell holders and other elements are interchangeable... how these and other features insure maximum adaptability to varying applications.

ELIMINATION OF FALSE ENERGY AND ZERO DRIFT: This important feature is described, and illustrated with typical data and charts.

ELIMINATION OF TEMPERATURE CORRECTION: The method of thermostating the instrument against

temperature variations is described and the importance of this feature explained.

ELIMINATION OF GALVANOMETERS: Beam modulation, energy receiver and electronic amplifier are described, showing how they eliminate the temperature, non-linearity and vibration difficulties associated with galvanometers.

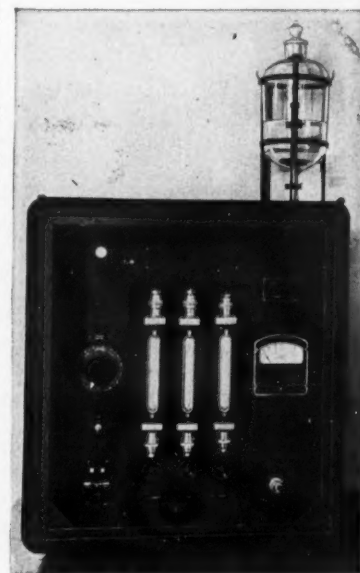
IN ADDITION, internal views of the instrument, light path diagrams, typical recorded curves and many other valuable IR2 features are contained in this Bulletin. It is an invaluable aid to anyone contemplating the purchase of infrared equipment for it gives detailed facts on the latest infrared advancements!

Instruments

Analyzer Reveals Excess of Halogenated Hydrocarbons

Halogenated hydrocarbons in excessive amounts detected and recorded by semi-portable unit

Uses — Suggested uses for the equipment are: (1) Health and Safety Departments, using the portable equipment described that is readily transported to the scene of suspected halogenated hydrocarbon contamination for quantitative tests over a period of time. (2) Research laboratories using semi-portable or permanent equipment for studies of the effect of varying concentrations. (3) Manufacturers of halogenated hydrocarbons, using permanent installations of multi-point analysers and controlling recorders exercising continuous surveillance over plant atmospheres and giving warning when dangerous concentrations exist. (4) Users of halogenated hydrocarbons, using permanent installations for the safeguarding of their workers.



Instrument detects excess quantities of halogenated hydrocarbons

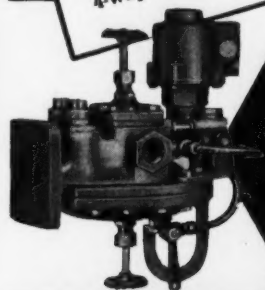
Features — When used in conjunction with a conductivity recorder this instrument provides a continuous record of the magnitude of the contamination experienced. Adequate warning may be given if dangerous concentrations are reached in the hazardous atmospheres for which the instrument was designed.

Description — In operation, a constant stream of sampled atmosphere is mixed with hydrogen in fixed proportion, and passed through a quartz combustion tube maintained at above 800° C. Under these conditions decomposition to the corresponding hydrogen halide, such as hydrogen bromide, occurs. Hydrogen is continuously absorbed in a measured stream of distilled water, and the electrical conductivity of the water solution measured and recorded. One unit of semi-portable design, enclosed in an aluminum and magnesium cabinet of approximately two feet in all three dimensions, is offered. Overall weight is approximately 125 lbs. exclusive of the recorder. 115 volt 60 cycle A. C. supply is required for operation and current consumption is 10 amperes, distilled water is used at the rate of less than 1 liter per hour and hydrogen at 1 cu. ft. per hour at atmospheric pressure. Water reservoir holds four liters. No other utilities are required. Permanent installations for tests of up to six different sampling points are also offered. A 4 point analyzer can be supplied mounted and completely enclosed in a steel cabinet measuring approximately 70" high x 18" deep x 22" wide, and provided with four ball bearing rubber

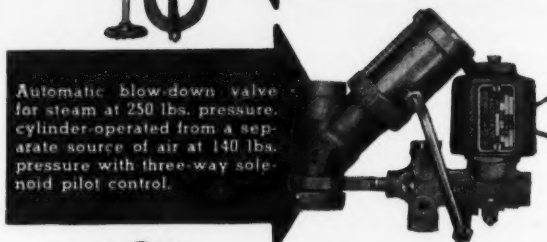
ASCO

Special SOLENOID VALVES by Specialists in SOLENOID VALVES

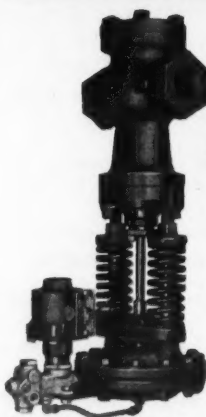
We invite inquiries in special control problems for which solenoid valves basically are required but for which standard valves will not serve properly. We have designed hundreds of special valves in all classes: safety shut-off and trip; shut-off; pilot (2, 3 and 4-way); explosion-proof.



4-way diaphragm-operated solenoid pilot control valve, poppet type seats and discs for tight sealing; manual operating devices and speed adjustment used for control of double acting hydraulic cylinders.



Automatic blow-down valve for steam at 250 lbs. pressure, cylinder-operated from a separate source of air at 140 lbs. pressure with three-way solenoid pilot control.



Still another good example of our special valves is this 3-way Diaphragm Operated Pilot Controlled valve for handling coke oven gas.

The companies purchasing these three special ASCO Solenoid Valves came to us because of our fundamental knowledge of solenoid valve design and manufacture. We'll be glad to design special solenoid valves to meet your requirements if our standard valves will not serve.

We also manufacture a quality line of Automatic Transfer Switches, Remote Control Switches, Contactors and Relays



Automatic Switch Co.
47 EAST 11th STREET NEW YORK 3, N. Y.

When inquiring specify CP A5805 — see handy form pages 2-3

Instruments

wheels. Weight of this unit is about 500. pounds. Complete information can be supplied on application.

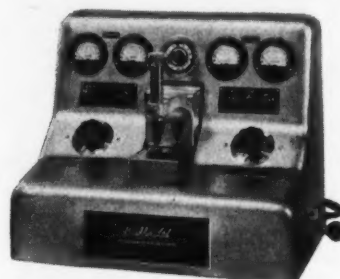
INDUSTRIAL INSTRUMENTS, INC., Dept. CP, 17 Pollock Ave., Jersey City, N. J.

When inquiring specify CP A5806 — see handy form pages 2-3

★

Metallurgical Specimens Polished Electrolytically

Provides a uniformly flat sample, and freedom from disturbed metal on the surface of the sample



Buehler-Waisman electro-polisher

Uses — Electro-polishing of metallurgical specimens is accomplished with this device. It can be used with both ferrous and non-ferrous metals, and accommodates a wide range of sample sizes.

Features — Operation is economical, requiring only a small amount of non-explosive solution. One of the principal advantages of electro-polishing is the freedom from disturbed metal on the surface of the sample.

This is especially important with those metals, such as the austenitic stainless steels, which are particularly susceptible to cold working. In addition, electro-polishing offers greater speed requiring generally less than a minute after the sample has been prepared with fine emery paper. Many samples, too, may be etched immediately after polishing, with the same solution, by reducing the applied voltage.

Description — In operation the specimen is made the anode of an electrolytic cell. Charged atoms or ions from the specimen enter the electrolyte, resulting in a polishing film which covers the surface of the specimen and offers resistance to the passing of the current. Since this film is thinner on the high spots, more current flows in these areas and consequently more material is removed, which results in a uniformly flat surface.

The electrolyte is contained in a stainless steel tank, hinged at the back. The specimen is fitted over a hole in this tank, and is brought into contact with the electrolyte by tilting the tank down. This action also operates a mercury switch which starts an agitating pump. The instrument is housed in a metal cabinet, with an inclined control panel. Here are mounted the meters, switches and knobs for controlling duration of the polishing and etching actions. The manufacturer states electrolytic polishing is not to be considered the best method for all samples. Mechanical polishing, such as provided by other apparatus manufactured by the company is to be preferred at present for inclusion and porosity examinations, and some other special work. Complete details on request.

BUEHLER LTD., Dept. CP, 165 W. Wacker Drive, Chicago 1, Ill.

When inquiring specify CP A5807 — see handy form pages 2-3

AND **NOW** THE

MERIAM

MICROMANOMETER

FOR

*Checking
AND
Calibrating
INSTRUMENTS*

● This new, efficient instrument is used mainly for calibrating low pressure instruments and other devices. It can be employed also as a conventional manometer for reading pressures or vacuums.

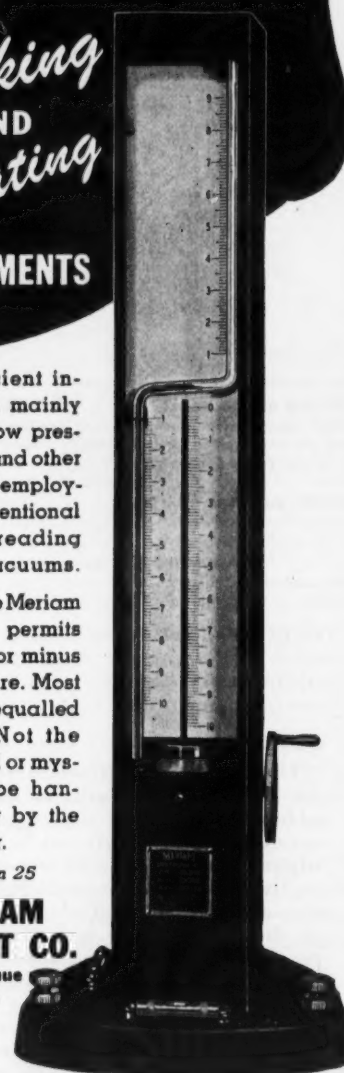
Highly sensitive, the Meriam Micromanometer permits readings to plus or minus .001" water pressure. Most rugged, and unequalled in simplicity. Not the least complicated or mysterious, it can be handled successfully by the average operator.

Ask for Bulletin 25

**THE MERIAM
INSTRUMENT CO.**

10940 Madison Avenue
Cleveland 2, Ohio

Patent Applied For



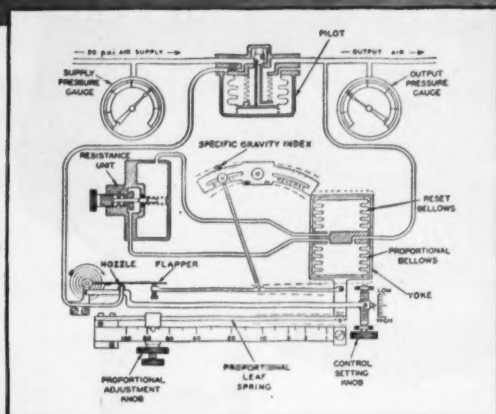
MERIAM ★
Instruments
ESTABLISHED 1911

MANOMETERS, METERS AND GAUGES FOR THE ACCURATE MEASUREMENT OF PRESSURES, VACUUMS AND FLOWS OF LIQUIDS AND GASES

When inquiring specify CP A5808 — see handy form pages 2-3

NOW

Proportional-Reset Action Added to 12,000 Series Displacement- Type Level Controllers



SETTING INDEX SCALE
Provides control point setting through full level range. Vernier knob for smooth and positive adjustment.

SPECIFIC GRAVITY SCALE
Calibrated from 0.5 to 1.2 or from 0.8 to 2.0 specific gravity.

PROPORTIONAL BAND SCALE
Calibrated from 2 to 100% over 4-inch length. Linear proportional characteristics to close limits in all settings.

RESISTANCE UNIT
Scale is calibrated over a 10-inch length. Simplified assembly and precision machining for reproducible settings.

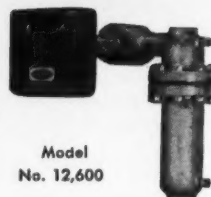
PILOT
Sensitive, compact, high capacity, readily removable from case.

The Proportional-Reset Level Controller combines the basic Proportional Level Controller with automatic reset response. The addition of reset action eliminates the permanent deviation or "offset" of the level resulting from load changes which is the inherent characteristic of proportional controllers.

CONSTRUCTION

The Proportional-Reset Controller differs from the standard Proportional Controller in the addition of a reset bellows pneumatically connected to the proportional bellows through an adjustable resistance. The free ends of the opposing reset and proportional bellows are rigidly connected by means of a yoke. The force exerted on the proportional leaf (cantilever) spring is proportional to the algebraic sum of the pressures in the proportional and reset bellows. The proportional band adjustment is made by varying the effective length of the leaf spring.

The resistance unit consists primarily of a precision machined stainless steel tapered plug and tapered orifice which controls the flow of air between the proportional and reset bellows.



The position of the tapered plug, which determines the reset rate, is set by rotating the adjustment knob. A spiral scale allows two full turns of the reset knob and is graduated in arbitrary units of 0.2 to 100 which are directly proportional to actual reset rate.

APPLICATION

The Proportional-Reset Level Controller is used for: (1) applications where constant level is required in the presence of large sustained load changes and (2) "averaging" level control. Standard ranges from 14 inches to 15 feet. Specific gravity ranges are 0.5 to 1.2 and 0.8 to 2.0. Available torque tube materials are inconel, Type 316 stainless steel and monel.

MASON-NEILAN REGULATOR CO.

1203 ADAMS STREET

New York Buffalo Philadelphia Pittsburgh
Tulsa San Francisco Los Angeles Houston



BOSTON 24, MASSACHUSETTS

Cleveland Chicago Atlanta St. Louis
Mason Regulator Co. of Canada, Ltd. Montreal and Toronto

When inquiring specify CP A5809 . . . see information request blank, pgs. 2-3

Instruments

Tachometer Measures Speeds Low As 1 Revolution Per Minute

Has accuracy of 1% and operates on
110 volts 60 cycles

Uses — These tachometers find wide use on applications where the low speed to be measured is not geared to a high speed drive.

Features — Low torque is sufficient for its operation and long life with continuous use is obtained because the few moving parts are very simple and are mounted in permanently-lubricated ball bearings. Accuracy is 1% of full scale and is sustained even under adverse working conditions. Both the head and the indicator are ruggedly built and it is impossible to damage the device by accidental over-speeding.

Description — Speeds as low as 1 revolution per minute or 1/4 foot per minute are measured with this device, which is available for continuous indicating or recording applications. Tachometer consists of a tachometer head and an indicator or recorder which may be mounted any distance from the head. While electric in nature, the tachometer does not employ a generator or vacuum tube but is based on a new principle. The head is a contact-making mechanism which is connected in series with a reactance and the indicator to voltage source so that the current flowing through the indicator is directly proportional to the speed. Operating power is obtained from 110 Volts 60 cycles and the calibration is unaffected by changes in line voltage. Manufacturer will supply more information on request.

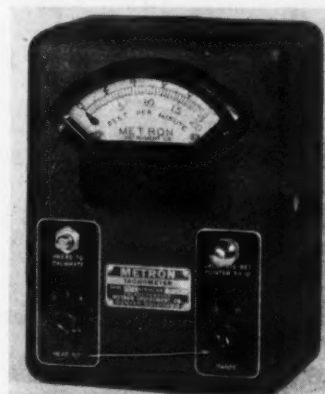
METRON INSTRUMENT CO., Dept. CP, 432 Lincoln St., Denver, Colo.

When inquiring specify CP A5810—see handy form pages 2-3

★

Handbook on Fluid Measurements is Storehouse of Fundamental and Reference Information

151 pages, 38 figures and 55 tables form a handbook that provides basic and reference information on fluid measurement. This fluid flowmeter handbook offers complete yet concise treatment of fluid measurement, including related factors, equipment, equations and computations in terms of steam, water, oil, and gas flow. Derivations of formulae include those of a universal formulae for fluid measurement with thin plate orifice, practical working equations, and the Reynolds Number Recommendations of the Joint American Gas Association-American Society of Mechanical Engineers' Committee on fluid measurement for orifice installations are included. Separate chapters have been devoted to compressibility of gases, orifice calculations for various fluids, steam and gas flow, and the application of correction factors. Discussed by chapters are: orifice meter



Switchboard tachometer

Instruments

measurement, orifice plate and differential connections, flow approximation tables, derivations of working formulae, working equations, and the relationship between coefficient and Reynolds Number. Summary of equations and nomenclature and volume computations conclude this highly desirable book on this fundamental subject. The Flow Meter Engineering Handbook is available from the subject company at \$2.50 per copy. Send no remittances to this magazine but to the address below.

THE BROWN INSTRUMENT CO., Dept. CP, Philadelphia, Pa.

When inquiring specify CP A5811 — see handy form pages 2-3

★

Unit Combines Transformer And Pyrometer

Used on heating jackets or other equipment up to
200 watts



Uses — Designed primarily to control temperatures in heating jackets this unit can also be used wherever a variable transformer is required.

Features — Unit operates at full power for a long period of time at high amperage load without any appreciable heat rise. Voltages are controlled by two snap-type switches; one for primary adjustment and the other

for vernier adjustment, giving approximately three volt step-ups. This assures positive repeat voltage control. This arrangement also eliminates coil type sliding contacts. Switches are made with ceramic housings, have silver plated contacts for long service, and are connected to the coil with strip copper take-off leads. An easily replaceable fuse is provided to protect the instrument. Adequate insulation is provided, and each unit is tested to five times the maximum working voltage to insure safe operation.

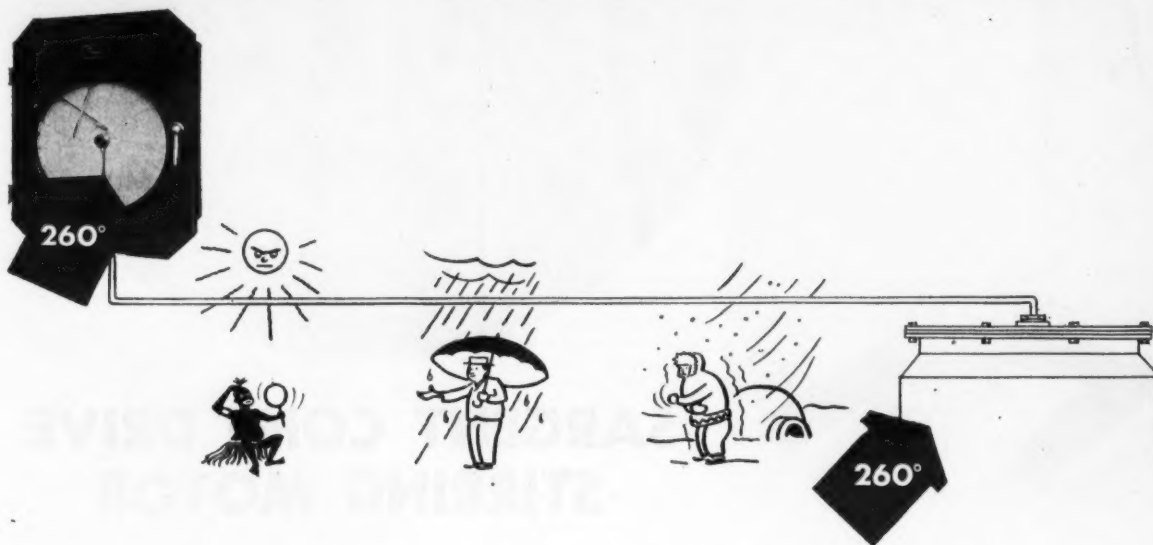
Description — Heavy duty rubber covered input cable is employed and twin plug outlet receptacles permit connecting both a hemispherical jacket and cover or two hemispherical units at the same time and the same power. A red signal light shows when transformer is in operation. Built-in pyrometer indicates operating temperatures up to 400° C. Dial has both Centigrade and Fahrenheit scales for convenient reading. A red line indicates the danger zone or maximum operating temperature for heating jackets under all conditions. An iron-constantan fixed resistance wire lead, encased in a woven glass impregnated sleeve is installed to the pyrometer, with an "AN" type iron-constantan plug at the other end for hooking up the heating jackets. Bulletin No. EG-100 gives more factual data on this equipment.

SCIENTIFIC GLASS APPARATUS CO., INC., Dept CP,
49 Ackerman St., Bloomfield, N. J.

When inquiring specify CP A5812 — see handy form pages 2-3

NOW

ALL STAINLESS STEEL (18-8)
CONSTRUCTION MAKES TAYLOR
ACCURATUS THERMAL SYSTEMS
Better than ever!



FRANKLY, we never thought we could improve the quality of Taylor Accuratus Tubing. Its unique in-built construction automatically compensated for temperature variations between the point of measurement and the instrument case. This made it possible to extend the many advantages of mercury actuated systems to applications where long lengths of connecting tubing were necessary.

But now we *have* improved it—with 18-8 stainless steel—giving you these new, extra advantages:

- 1. Corrosion resistant.** It will not rust!
- 2. Tougher.** Withstands more bending and vibration.
- 3. Easily installed.** It's more flexible.
- 4. Smaller bulbs.** More adaptable to limited space applications.
- 5. Standard** with stainless steel construction from tip of bulb to instrument case.

You get all this *in addition* to these important time-tested advantages of Taylor's mercury actuated tube system:

Uniformly graduated charts Short ranges
Great power and dependability Low initial cost

As good as it is, we don't recommend the new Taylor Accuratus Thermal System as a cure-all for your temperature measuring problems. We've got a complete department store of thermal systems—mercury, vapor, gas, organic liquid—each with its own definite advantages. No matter what temperature problems you have, Taylor can deliver you the instrument that's best suited to solve them.

Call your Taylor Field Engineer or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

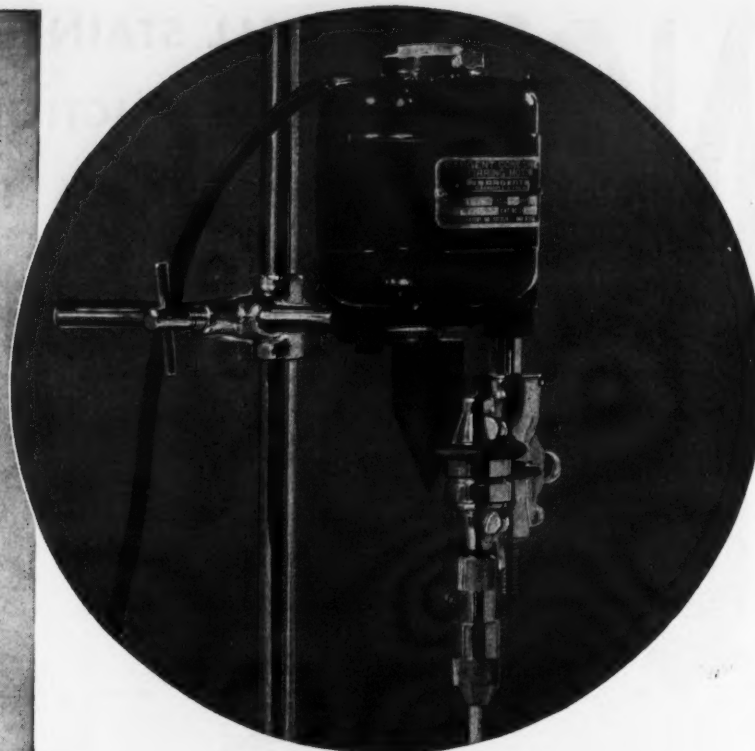
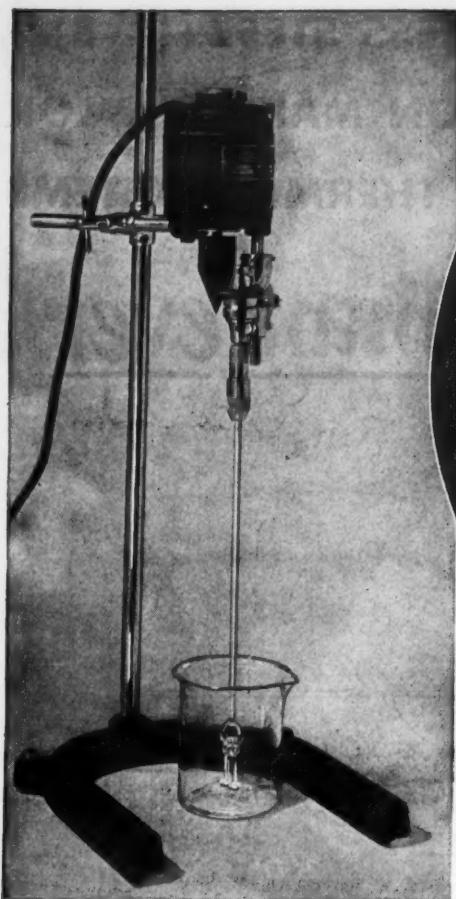
Taylor Instruments

— MEAN —

ACCURACY FIRST

IN HOME AND INDUSTRY

When inquiring specify CP A5813 . . . see information request blank, pgs. 2-3



SARGENT CONE DRIVE STIRRING MOTOR

Smooth, Vibrationless Drive with full power of motor delivered at all speeds

Throughout the entire speed range of 75 to 1300 r.p.m., the Sargent Cone Drive delivers *full* motor power, is vibrationless and silent, and assures constancy of any selected speed. It is, therefore, as efficient for such applications as the rotation of electrodes and calorimeter paddles at speeds of about 200 r.p.m. or less, as it is for general stirring operations at higher speeds. Fine adjustment of speed is made by means of an adjusting nut which changes the effective diameter of the cone in contact with the friction ring. Because the motor is a brushless, induction type not containing centrifugal switches, it is relatively safe against explosion. The simple right angle clamp permits rapid adjustment of the motor to any desired position in horizontal and vertical planes.

S-76445 Sargent Cone Drive Stirring Motor. (Patent No. 1,973,576.) Complete with cross support rod, right angle clamp, connecting cord and plug, but without support stand. For operation from 115 volt A.C. 60 cycle circuits..... **\$33.50**
S-76455 Ditto. But for 115 volt D.C. circuits..... **38.50**
S-76465 Ditto. But for 230 volt A.C. 60 cycle circuits.... **34.50**
S-76475 Ditto. But for 230 volt D.C. circuits..... **40.50**
S-76480 Anode Chuck and Cathode Collet..... **1.50**
S-79225 Support only for Sargent Cone Drive Stirring Motor (illustrated above). Designed with considerable mass to minimize support vibration. The heavy U shaped base accommodates vessels up to six inches in diameter and larger vessels can be placed on top of the base which has a flat surface. Supplied with a 5/8" rod, 30 inches long and adjusting screws to insure a solid four point support on any surface. Each.... **\$10.00**

E. H. SARGENT & COMPANY, 155-165 East Superior Street, Chicago 11, Illinois

Michigan Division: 1959 East Jefferson, Detroit 7, Michigan

SARGENT

SCIENTIFIC LABORATORY SUPPLIES

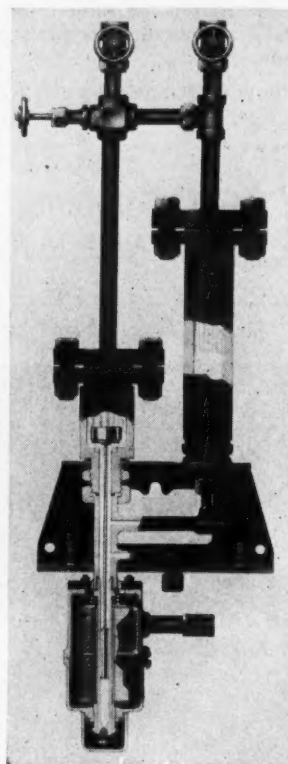
Instruments

Meter Body Handles Viscous, Corrosive and Volatile Fluids.

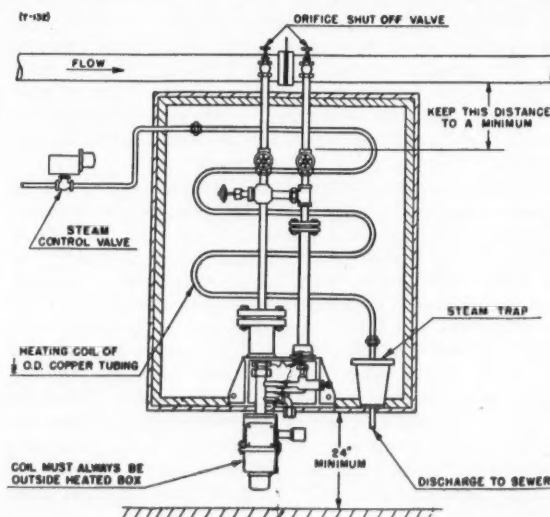
Eliminates seal pots and purge systems; gassing or vapor pocket formation avoided

Uses — This meter body when used in conjunction with an electric flow meter, will handle viscous fluids such as, tar, pitch, tower bottoms, and fuel oil; corrosive agents, such as anhydrous hydrofluoric acid; volatile substances, such as butane and propane; and hot liquids such as heat transfer salts.

Features — A sealed armature, employed in the meter body, incorporates characteristics which to a very great extent minimize the problems sometimes associated with flow measurement, including: requirements for special attachments and accessories, such as external seal pots and purge systems, limitations relative to the viscosity of the fluid in the meter body, gassing or the formation of vapor pockets, temperature limitations of the meter body, and limitations relative to the corrosive action of the flowing fluid. Coil is unaffected by heat in the meter body. Piping connection to the orifice may be short and heat may be applied



1. Electric flow meter body with sealed armature connection to the orifice may be short and heat may be applied



2. Recommended method for installing heating chamber externally to the meter body. Thus, fluids may be heated to render and maintain them in a non-viscous condition.

Instruments

Installation and maintenance costs are lower, since accessory equipment is eliminated.

Description — As indicated in the accompanying illustration the armature housing is below the float chamber. This permits heated fluids to pass directly into the manometer without affecting the inductance coil. For liquids which have a high viscosity at the ambient temperature of the meter body, the recommended method of installation is illustrated in the diagram. A request will bring complete information.

BROWN INSTRUMENT COMPANY, Dept. CP, Philadelphia, Pa.

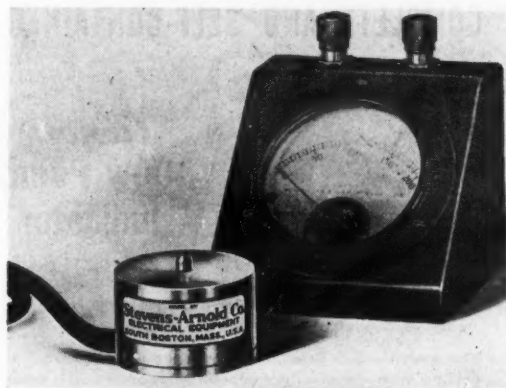
When inquiring specify CP A5815 — see handy form pages 2-3

Pressure and Deflection Pick-up Accurate From 0.001" to 0.1"

Will also measure force pressure acceleration and deflection under heavy vibration and 300° F.

Uses — A combination of this instrument and an inexpensive voltmeter gives remote indications of force, acceleration, pressure, electrical deflection, and electrical micrometer readings from 0.001" to 0.1", with response up to 100 cycles.

Features — Because of an output of 75 millivolts and an internal resistance of less than 1 ohm, this instrument may be connected directly to standard indicating instruments of a type that are rugged, inexpensive and portable. Several pickups may be connected in parallel. The instrument may be used under unfavorable operating conditions,



Pickup is hermetically sealed

including heavy vibration, at temperatures up to 300 F. and because it is hermetically sealed, it may be submerged in water.

Description — Unit is an hermetically sealed electrical pickup which translates minute deflections or pressure variations, applied to its plunger, into linear changes in its D. C. output voltage. Power supply may be 115 volts A. C. or an 8, 12, or 24 volt battery. Results may be recored on a continuous strip chart. Further information may be had by writing.

STEVENS-ARNOLD CO., Dept. CP, 22 Elkins St., South Boston, Mass.

When inquiring specify CP A5816 — see handy form pages 2-3

The New MANOSTAT

THE NEW CARTESIAN MANOSTAT

Improved Model (Patent Pending)

Successful operation and general acceptance of our first model Cartesian Manostat (over 3,000 in use) has led to the development of a new, more sensitive, completely unitized and mounted instrument.

The Emil Greiner Company, first to offer a regulator that operated purely on a pressure principle, now offers an improved model of that regulator.

The new manostat is mounted on a support and unitized to insure safe handling and easy installation in the laboratory. One three-way stopcock has replaced the two straight bore stopcocks formerly used, which makes for easier manipulation of the instrument.

By increasing the diameter of the float and the float chamber, we have increased the sensitivity to the point where any laboratory system can be held to within one micron of the pressure desired.

We recommend this device as a most convenient, effective means for obtaining reduced pressure control in vacuum distillations, etc. This device presents a simple, positive means for setting and maintaining any desired vacuum in a system. It eliminates all electrical appliances and no additional accessories are required other than shown in illustration.

The apparatus consists of three parts:

- (1) The "U" tube which is the reservoir for the mercury and has three-way stopcock which connects to the system and central sealed-in tapered tube.
- (2) A float which is weighted with glass at the upper portion and has a receptacle at the top into which is fitted a soft rubber disc or diaphragm.
- (3) The manifold which has an orifice of correct size at the end of the tube, leads into the "U" tube and centers over the rubber disc on the float.

The principle of assembly and operation are as follows:

- (a) The stopcock is put in "open" position.
- (b) Mercury to a height of 2 in. is poured into the reservoir of the "U" tube and the float dropped in.
- (c) The manifold is connected by tightly inserting the rubber stopper holding the vertical throttling tube. The tube is centered as nearly as possible over the diaphragm and set so that there is about a millimeter of clearance between the orifice and the disc.
- (d) Connect to vacuum pump and system and start suction pump.
- (e) When the desired vacuum is reached, close stopcock and system will immediately begin to function. If slightly reduced pressure (within a mm. or so of this setting) is desired, the orifice is pulled up slightly and vice versa, if increased pressure is wanted.

The functioning is explained by the fact that when the pressure is reduced to the desired point in the manostat and system, equal pressure exists within the mercury-sealed bell chamber of the float and outside of it. The mercury therefore is at the same level.

As soon as the stopcock is closed, it is obvious that any evacuation of the system can only be accomplished through the orifice which is now just exactly in contact with the disc.

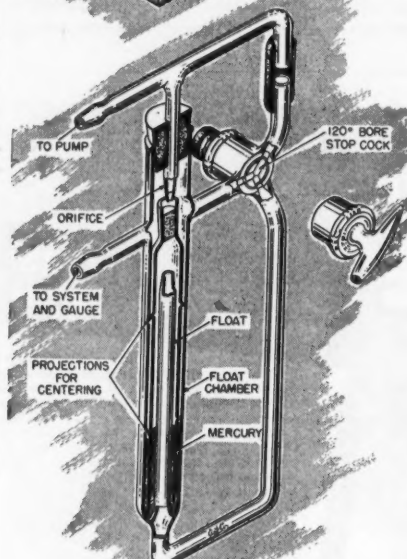
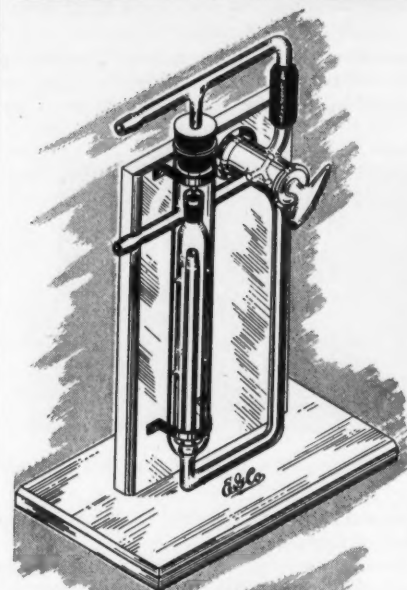
The leak (not exceeding the capacity of the pump) now causes increased pressure in the system and consequent mercury displacement downward outside the float and upward inside the float. The float then sinks, opening up the orifice and permits unrestricted exhaust which then restores equilibrium as the float rises and pushes the disc in contact with the orifice and throttles the effect of the pump as required.

With properly assembled system, smooth accurate control is obtained with no visible fluctuations.

E-1855. Cartesian Manostat, improved model complete as illustrated, made of pyrex glass, mounted on wood support.....each **\$27.50**

Note: E-1853. Cartesian Manostat with two stopcocks, unmounted, still available at.....each **\$19.50**

"For complete details, see article by Roger Gilmont in the October 1946 Analytical Edition of "Industrial and Engineering Chemistry."

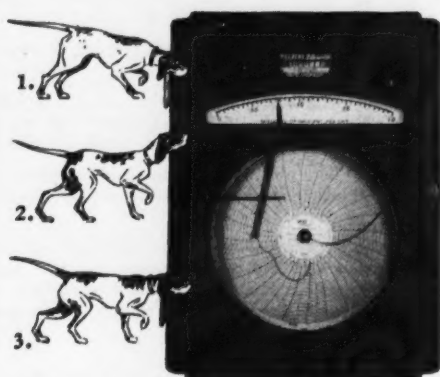


THE EMIL GREINER COMPANY
161 SIXTH AVENUE, NEW YORK 13, NEW YORK CITY

When inquiring specify CP A5817 . . . see information request blank, pgs. 2-3

Three Point Performance

Another member of the Builders "family" of thoroughbred instruments is the Flo-Watch which totalizes, indicates and records — with all three dials in one compact instrument.



Reads like a speedometer:

1. Seven-figure counter shows gallons, pounds, etc., directly — eliminates odd multipliers.

Large separate indicators:

2. Scale 10" long with uniform graduations — easily seen from a distance.

The chart tells the story:

3. Twelve-inch recording chart, printed from engraved plate on special moisture-resisting paper — easy to read — available in any desired units of flow.

Flo-Watch accurately measures flow over the wide range of 1 to 10 through any primary device — Venturi Tube, Insert Nozzle, Open Flow Nozzle, Simple Orifice Plate, Oriflo Plate and Flanges. This universal flow meter instrument is available with floor stand or wall or panel mounting . . . also, in weatherproof housing for outdoor installation.

For Bulletin 318B, address Builders-Providence, Inc.
(Division of Builders Iron Foundry)
47 Coddling Street, Providence 1, R. I.

Builders Products

Venturi, Propelloflo and Orifice Meters • Type M, Flo-Watch and Flo-Gage Instruments • Sbantflo Steam Meters • Kennison Nozzles • Chronoflo Telemeters
Conveyor Scales

BUILDERS-PROVIDENCE

BUILDERS

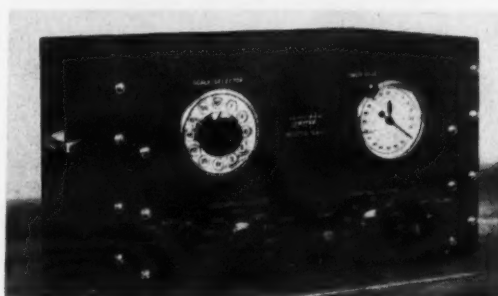
When inquiring specify CP A5818 — see handy form pages 2-3

Instruments

Autoscaler Makes Quantitative Measurements of Radioactivity

Has fixed statistical error for each setting of the scale selector switch

Uses — This instrument is used for making quantitative measurements of radioactivity. It supplies the high potential for a Geiger-Mueller tube, counts the impulses from



Unit includes high voltage supply, precision timer and electronic circuit

this tube, and measures the time required for the reception of a given number of impulses.

Features — Automatic operation with no internal adjustments. Automatically stops, and after a predetermined number of counts up to 4096 provides a relay control con-

**EASY TO READ
DIAL
THERMOMETER**

Economize WITH **POWERS
TEMPERATURE REGULATORS**

Use a Powers No. 11
Temperature Indicating Regulator when
you want the advantages of an easy-to-read
dial thermometer combined with a dependable
self-operating regulator. The dial thermometer
gives a visual check on the performance of
the regulator and makes it easy to adjust for
the required operating temperature. Various
dials and ranges are available.
Is Easy To install — because both the thermom-
eter and the regulator operate from the
same thermal system — only 1 tapped open-
ing is required. Write for Circular 2511. (71P)

THE POWERS REGULATOR CO.
2769 Greenview Avenue, Chicago 14, Illinois
231 East 46th Street, New York 17, New York
Offices in 47 Cities... See your phone directory.

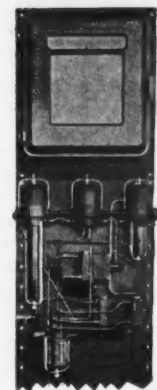
POWERS

OVER 50 YEARS OF AUTOMATIC TEMPERATURE AND HUMIDITY CONTROL

CONTROLS HEATING OR COOLING MEDIUMS

When inquiring specify CP A5819 — see handy form pages 2-3

SIMULTANEOUS ANALYSIS OF 5 GASES



CAMBRIDGE 5-POINT GAS ANALYSER provides simultaneous analysis and continuous graphic record of the amounts of CO₂, H₂, CO, CH₄, and O₂ in a sample of combustion products. Enables close control in metallurgical industry, chemical processes, oil refining, kilns, inert gas producers and other chemical processes. Other gas analysing equipment available. Inquiries for special applications invited.

CAMBRIDGE GAS ANALYSERS

Cambridge Instrument Co., Inc.

3706 Grand Central Terminal

New York 17, N. Y.

Send for descriptive bulletin

When inquiring specify CP A5820 — see handy form pages 2-3

COMPLETE AND SELF-CONTAINED



Alnor
**Dew Point
Indicator**

This precision Dew Point Indicator does not require external cooling means or auxiliary apparatus. It gives rapid, accurate determinations of dew point of any non-corrosive gas. Relative humidity, grains moisture per lb., and latent heat can also be obtained by conversion factors. Indications take place in an enclosed observation chamber under controlled conditions, reducing errors due to the human element and allowing consistent determinations by several observers.

The Alnor Dew Point Indicator has proved of great value in connection with controlled atmospheres in furnaces; for users and producers of compressed gases; with gas fuels; and in many industrial uses of air conditioning. Its simple operation and consistent accuracy encourage proper control of industrial processes wherever dew point is important. Write for Bulletin 4017.

ILLINOIS TESTING LABORATORIES, INC.

420 NORTH LA SALLE STREET • CHICAGO 10, ILLINOIS

When inquiring specify CP A5821 — see handy form pages 2-3

ALL ELECTRIC FLOATLESS

LIQUID LEVEL CONTROLS

Control variations in levels from 1/4" upward. Remote control if desired — any distance. Protects pumps against falling water table. Ice free electrodes available.

Since 1933 B/W Controls have provided positive, dependable, economical liquid level control. No floats! No vacuum tubes! No moving parts in liquid.

WRITE FOR CATALOG

B/W CONTROLLER CORPORATION

2204 East Maple Road, Birmingham, Michigan

FIRST IN THE FLOATLESS CONTROL FIELD

When inquiring specify CP A5822 — see handy form pages 2-3



Everyone's Excited..
about this
**GREAT NEW
THERMOMETER**

We don't expect your temperature to rise, but frankly, everyone's excited about the new Palmer Thermometer. Never, since the introduction of now-famous "Red-Reading-Mercury" by Palmer, have such important and exclusive advantages been offered to industry.

This new thermometer, made in 4, 6, 7, 9 and 12-inch sizes, features an entirely new and patented extruded brass case which is dust-proof, fume-resistant, strikingly modern and attractive. The V-shape design of the case with double-strength glass offers much greater protection for the tube as well as a larger, easier reading scale. The case is fitted with a snap-on cap which can be easily removed without tools.

Write for Bulletins 46-2 and 46-3 containing complete details.

Send your thermometers (all makes) to be repaired so Palmer technicians can modernize them, adding all of the features above at nominal cost.



PALMER THERMOMETERS, INC.

Mfrs. of Industrial, Laboratory, Recording and Dial Thermometers

2519 Norwood Ave., Cincinnati 12, Ohio

Canadian Plant: King and George St., Toronto 2

When inquiring specify CP A5823 — see handy form pages 2-3

Instruments

tact. It has short resolving time, is self calibrating, and can be used with all standard Geiger-Mueller tubes. There is a fixed statistical error for each setting of the scale selector switch.

Description — Impulses from the Geiger counter are fed to a preamplifier, a 2-stage amplifier, and then a multi-vibrator which triggers the first of a series of twelve "scaled by two" counter circuits. The latter can be selected by a switch to provide a predetermined number of impulses from 2 to the second power to 2 to the twelfth power in integral powers of 2. Statistical error involved in the measurement of an average counting rate by timing a finite number of random impulses is determined by the total number of impulses timed. Measurement of the time interval required for the accumulation of the selected number of impulses is accomplished by an output amplifier and cathode follower stage which actuates the clutch of the timer. Information on this unit may be obtained from the manufacturer.

TRACERLAB, INC., Dept. CP, 55 Oliver St., Boston, Mass.

When inquiring specify CP A5824 — see handy form pages 2-3

*

Tachometer Requires No Brushes, Commutators Or Gears

Accuracy 1% of full scale deflection, will withstand momentary overload up to 4 times maximum speed indication

Uses — Unit is designed for use where the "pick-up unit" or generator must be mounted permanently on a machine, and the meter mounted on a panel far removed from the generator position.

Features — The meter or indicating instrument is a rectifier type, which has a sturdy D'Arsonval movement. It is capable of withstanding a momentary overload up to



Panel type tachometer

four times the maximum speed indication without damage.

Description — Generator consists of a small, permanent 2 "Alnico" magnet rotor mounted on precision sealed ball bearings and capable of continuous operation at any speed within the limit of the meter. Meters are rectangular in shape and available in two sizes: 3", and 7". Both are available in three scale sizes: 0-1250rpm; 0-2500rpm; and 0-5000rpm. For installation up to 200 feet the generator may be connected with two conductor No. 18 insulated wire. For longer distances consult the manufacturer for proper size of conductor. Additional information on request.

IDEAL INDUSTRIES, INC., Dept. CP, 5073 Park Ave., Sycamore, Ill.

When inquiring specify CP A5825 — see handy form pages 2-3



THE BUSIEST TIMER IN ALL INDUSTRY

Because of These
**SUPERIOR
FEATURES**

- 1 **Contacts Carry 25 Amp. Loads . . .** frequently eliminating relays, thus simplifying wiring circuit and saving vital space.
- 2 **Telechron Motor . . .** specified in the first model built years ago because *best not cheapest*.
- 3 **Sharp Accuracy: 1/2 of 1% guaranteed.**
- 4 **Twelve Dial Ranges . . .** from 0-15 sec. to 0-60 hr.
- 5 **Two Types . . .** resetting and non-resetting upon power interruption.

THOUSANDS OF "VERNIER-SET" TIMERS NOW INSTALLED
LEARN WHY . . . SEND FOR BULLETIN B-10 TODAY



THOMAS, STANDARD LINE AND SPECIAL
AUTOMATIC TEMPERATURE CONTROL CO., INC.
LOGAN ST. & GERMANTOWN AVE. • PHILADELPHIA 44, PA.

When inquiring specify CP A5826 — see handy form pages 2-3

WHY YOU GET MORE ACCURATE Heat Tests WITH A



DESPATCH LABORATORY OVEN

EXACT control of heatflow through 100% of shelf area makes this oven ideal for critical heat processes demanding extreme accuracy.

- **±1°C. Sensitivity** of control is assured over wide range, 35-260°C. Provides extreme flexibility.
- **2 to 8 Min. Recovery** saves time between tests, aids lab. routine. For aging, drying, non-volatile tests, baking and similar work.

WRITE for Bulletin 105CP or see your dealer

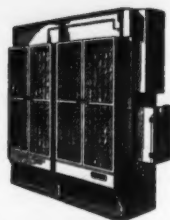


When inquiring specify CP A5827 — see handy form pages 2-3

AAF offers a complete line of Electronic AIR FILTERS

Self-Cleaning Electro-MATIC

The completely automatic operation of this Electronic filter answers both the problem of removing the dust and smoke from the air, as well as the secondary problem of disposing of collected material. A continuous curtain of collector plates passes intermittently down the front of the filter and thru a viscous cleaning bath at the bottom. Send for Bulletin No. 250.



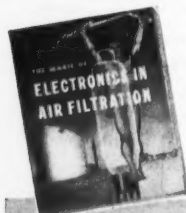
The Cleanable Electro-CELL

Sectional-type Electronic air filter with removable collector plate assemblies. This feature eliminates need for providing water, oil, compressed air and sewer connections at each installation. Spare collector plate assemblies can be set into place and service continued uninterrupted while dirty plates are being cleaned. Send for Bulletin No. 252.

Renewable Media Electro-AIRMAT

This is the only Electronic dry filter on the market. Uses sheets of "charged" airmat paper which are renewed manually or by a mechanical loader. Combines mechanical filtration with Electronic cleaning providing continuous service even thru a period of power failure should it occur. Send for Bulletin No. 253.

Send for your copy of this
interesting and helpful booklet.
Address Department 106.



AMERICAN AIR FILTER CO., INC.
INCORPORATED
106 CENTRAL AVE. LOUISVILLE, KENTUCKY
IN CANADA, DARLING BROTHERS, LIMITED, MONTREAL, P.Q.

When inquiring specify CP A5828 — see handy form pages 2-3

Instruments

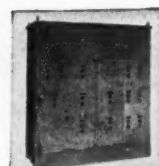
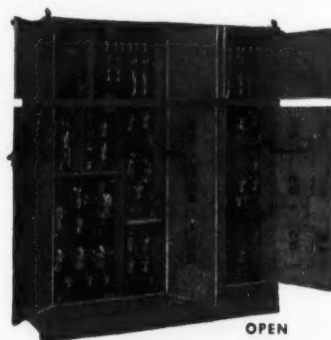
Level, Pressure and Flow Indicated Remotely

Six sizes available range from five ounce inches to 360 pound inches approximate pull out torque

Uses — DC positioning and indicating equipment which may be operated from any a-c or d-c line, is suitable for oil fields, steel mills, steam or hydro-electric plants. Specific uses: governor and generator field control systems for multiple synchronized diesel-electric drives, master remote control for reversing mill motors, and remote indication or control over level, pressure and flow indicators.

Features — Immediate receiver response without hunting or overshooting is attained over the entire operating range of the system. Power requirements are essentially constant under all operating conditions. Overloading the receiver beyond its torque rating cannot damage receiver or transmitter. Only four leads are needed for each receiver and two power supply leads to the transmitter on most applications. Overlapping characteristics afford maximum interchangeability, and the equipment can be readily modified to operate at any desired d-c voltage.

Description — Receiver is a positioning unit in which the relative strength of the magnetic fields of the stator determines the position that its permanent magnet rotor will assume. Any change in this relationship of the field



WITH CENTRALIZED CONTROL ONE MAN IN ONE PLACE CONTROLS EVERYTHING

Besides convenience and accessibility of centralized controls here are a few additional advantages:—

SAFETY of dead front enclosure with operation of all mechanisms from the front offers greatest protection to your operator.

SIMPLICITY of installation and wiring results in reduced costs.

SPACE SAVING with the single enclosure is accomplished. Frameworks and wall supports are not needed.

ENGINEERED CONTROL to meet your own requirements at little or nothing above the final cost of individual control units.

Let us show you the benefits. A Ward Leonard engineer will gladly help you to select a centralized control to meet your exact needs.

WARD LEONARD
RELAYS • RESISTORS • RHEOSTATS
Electric control devices since 1892

WARD LEONARD ELECTRIC COMPANY
92 SOUTH STREET, MOUNT VERNON, N. Y. • Offices in principal cities

When inquiring specify CP A5829 — see handy form pages 2-3

ONLY 1 MINUTE TO MAKE A TEST!

With a

Steinlite



It's easy to make a moisture test with a Steinlite . . . and it's fast. It takes an experienced operator just one minute to make a test — almost any operator can make a test in two or three minutes. It has tested a wide variety of products — grain, pop corn, nuts, cocoa, dehydrated eggs, etc.

All you do to make a test is (1) turn on switch, adjust needle on meter dial, (2) weigh out an accurate sample, (3) pour sample into hopper, (4) read meter dial, (5) compare reading with conversion chart showing percentage of moisture.

Sold on 10-day free trial basis. No money down.

SEEDBURO
EQUIPMENT COMPANY

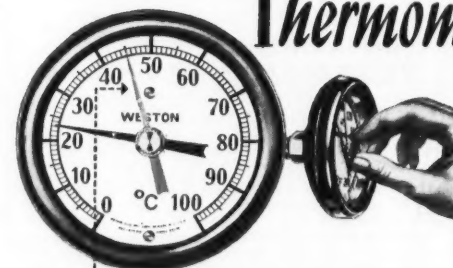
667 Brooks Building

Chicago 6, Illinois

When inquiring specify CP A5830 — see handy form pages 2-3

NEW all metal WESTON

MAXIMUM-MINIMUM Thermometer



RED INDEX shows the highest
or lowest temperature reached!

Simply swing the red index to the low side of the temperature pointer, and the index will move to the lowest temperature reached, and remain there until manually reset. For highest temperature record, simply swing the red index around to the high side of the pointer.

The index movement in no way impairs the guaranteed high accuracy of the WESTON Thermometer.

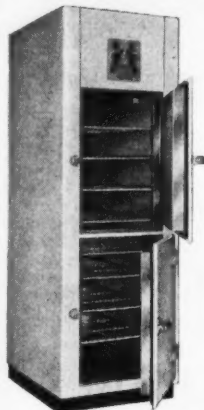
Thus the WESTON Maximum-Minimum Thermometer provides, at only slightly above ordinary thermometer prices, a means of obtaining high or low temperature records on equipment or processes where these extreme temperatures are critical. Ideal for transformers, sterilizers, ovens, chemical equipment, food processing, etc. For complete information, consult your nearest WESTON representative. WESTON ELECTRICAL INSTRUMENT CORPORATION, 618 Frelinghuysen Avenue, Newark 5, New Jersey.

When inquiring specify CP A5831 — see handy form pages 2-3

Available NOW... "Anets" LABORATORY CABINETS in stainless steel!

Accelerated peacetime production insures prompt delivery on "Anets" war-tested Laboratory Cabinets. Fully automatic, all-electric models with precision control of temperature and humidity right at your finger tips.

The LSC-16 is a new improved model with inner shell, ducts, air conditioner, door linings, shelf hangers, heating units, etc., of stainless steel. New, compact instrument panel with new super-sensitive, stainless steel dial type thermometers.



New molded rubber gaskets around doors provide a perfect seal. Many other improvements give you precision control and long life performance.

Write for bulletin No. 170.

- ★ Testing electrical and electronic units and assemblies.
- ★ Weathering, moisture absorption control, package testing, etc.
- ★ Incubation, germination and bacterial culture development.
- ★ Processing plastics, fabrics, metals and wood.
- ★ Fermentation, proofing and processing of food products.

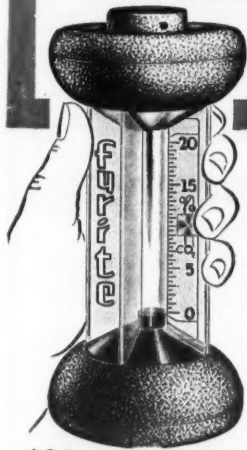
ANETSBERGER BROTHERS

3322 Elston Avenue, Chicago 18, Illinois

When inquiring specify CP A5832 — see handy form pages 2-3

DETECT FUEL WASTE IN 40 SECONDS

with the... **FYRITE**
CO₂ INDICATOR



The FYRITE makes accurate CO₂ analysis of the flue gases easy—and CO₂ percentage is the direct index of fuel wasted up the stack due to needless excess air being drawn into the furnace. The FYRITE is sturdy, spill-proof—accurate within 1/2 of 1% CO₂. No setting-up necessary; no valves, clamps, or leveling bottle. More than 13,000 are in successful use.

Send for Bulletin 703

\$24.00 Complete with rubber aspirator bulb, industrial type flue filter, and carrying case.

BACHARACH

Industrial Instrument Co.
7000 BENNETT ST.
PITTSBURGH 8, PA.

Also Available!
OXYGEN INDICATOR
for DIRECT Oxygen Analysis
Employs FYRITE principle... accuracy not affected by temperature and atmospheric conditions, or by presence of other gas in sample.
Ask for Leaflet 700

When inquiring specify CP A5833 — see handy form pages 2-3

Instruments

strength causes the rotor to turn and assume the position corresponding to the new resultant of the two fields. The receiver torque is a function of the displacement between the rotor and the magnetic axis of the receiver. Transmitter is essentially a variable resistance bridge, operated manually or automatically, and controls the relative strength of the receiver magnetic fields. Receiver and transmitter torques are independent and the receiver torque required to move a device has no effect on the transmitter. The transmitter is designed to operate any number of receivers within rated capacity at any specified d-c voltage. Six sizes now available range from 5 oz. inches to 360 lb. inches approximate pullout torque, and with a small drip-type rectifier unit may be operated on a-c. Complete details on request.

ALLIS-CHALMERS MFG. CO., Dept. CP, Milwaukee, Wis.

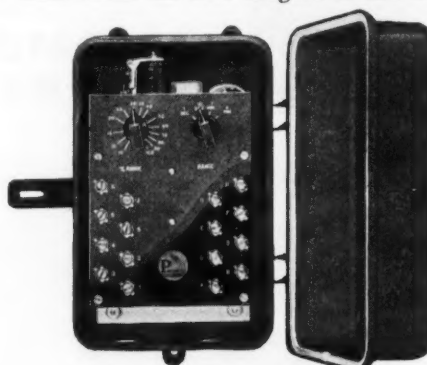
When inquiring specify CP A5834 — see handy form pages 2-3

Timer Handles Intervals From 1/20th Second To Four Minutes

Provides four basic types of timing with an accuracy of 2%

Uses — Recommended for process control and machine timing when repeat-cycle operation is required. It is used to control such equipment as spot-welders, grinders, honing machines, drilling machines, conveyors, automatic filling machines and photographic printers.

Features — Flexibility of the unit is obtained by bringing out many points of the circuit to terminals on the front panel. Basic circuit has been designed so that it is self-



Electronic interval timer

compensating for changes in line voltage. Accuracy does not change from day to day, nor will replacement of the vacuum tube alter the original 2% limit of accuracy variation. Either 115V or 230V supply line may be used. Low line voltages do not affect the timer's operation. Although the timer offers wide flexibility, it employs only one tube and one relay.

Description — Four basic types of timing are provided: interval, delayed action, automatic repeat, programming, as well as many variations of these four fundamental types. All of these timing combinations are incorporated in this one timer and may be utilized by merely changing external connections to the terminal board. Thus the timer is a universal one, capable of timing for any interval between 1/20th second and 4 minutes with an accuracy variation of less than 2%. Complete information on request.

PHOTOSWITCH INCORPORATED, Dept. CP, 77 Broadway, Cambridge 42, Mass.

When inquiring specify CP A5835 — see handy form pages 2-3

Gives the Boot to these TROUBLEMAKERS

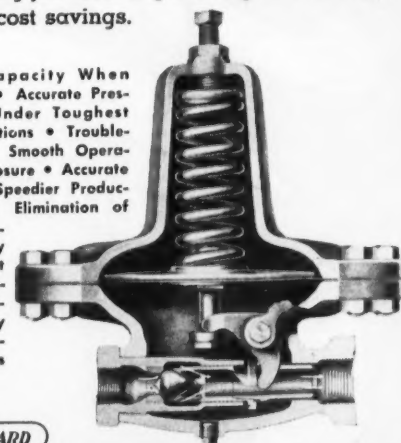


CASH STANDARD Streamlined TYPE 1000 PRESSURE REDUCING VALVES

These saboteurs in your plant are ticketed for complete disappearance when they get this boot. It's an immediate and profitable result you get thru valve performance when the CASH STANDARD Streamlined "1000" is put on the job. And these trouble makers can stage no comeback.

Write for Bulletin "962" — see how you can apply the "1000" to your lines to do that pressure reducing job most dependably and exactly, with good cost savings.

Maximum Capacity When Needed Most • Accurate Pressure Control Under Toughest Working Conditions • Trouble-Free Service • Smooth Operation • Tight Closure • Accurate Regulation • Speedier Production Results • Elimination of Failures • Constant Delivery Pressure • Cost Saving Operation • No Spoilage • Practically Zero in Maintenance Costs



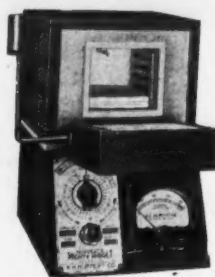
CASH STANDARD
CONTROLS...
VALVES

A. W. CASH COMPANY
DECATUR, ILLINOIS

When inquiring specify CP A5836 — see handy form pages 2-3

ALL-IN-ONE

with new precision temperature control



HUPPERT "MIGHTY MIDGET" LABORATORY FURNACE

The "Mighty Midget" is the first laboratory and small batch production furnace to offer accurate built-in temperature control. Any temperature from 200° F. to 1750° F. can be accurately maintained. There are no extra controllers or other equipment to buy. The "Mighty Midget" is ruggedly constructed to stand maximum abuse under continuous operation. It features all-steel construction, heavy insulation, built-in stepless control, special high temperature alloy elements, quality pyrometer, etc. I.D. 3" x 3" x 3" — O.D. 8 1/2" x 10 1/2" x 8 1/2". Operates on 110 V.A.C. Current Consumption 500 watts.

Complete with automatic control and pyrometer \$60.00

These same features are being incorporated in larger capacity Furnaces — write for the Huppert catalog.

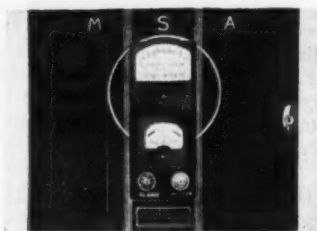
K. H. HUPPERT CO.
6822 Cottage Grove Avenue, Chicago 37, Ill.

When inquiring specify CP A5837 — see handy form pages 2-3

Instruments

Indicator Measures Oxygen Content Of Gaseous Mixtures

Ranges 0 to 0.5%, 0 to 5%, 0 to 10%, and 0 to 25%



Oxygen indicator

Uses — This oxygen indicator is useful for measuring the oxygen content of gaseous mixtures in chemical, metallurgical, petroleum, and allied industries, and for combustion and process control — in gas transmission and distribution — for improving the safety of utility operations and controlling pipe line corrosion. **Features** — Large size integral concentration meter can be read directly to 2% of full scale range. An adjustable high point contacting device can be used for automatic activation of warning signals or control circuits whenever oxygen concentration exceeds a predetermined limit. Indicator requires only a sample flow of 25 to 75 cc. per minute. Operation has been simplified and maintenance reduced to a minimum.

Description — The most important single element of the indicator is its electrolytic detector cell. This is made up of a plastic container with a hollow carbon tube and metallic plate serving as electrodes in approximately an

PALO-MYERS LABORATORY STIRRERS IMMEDIATE DELIVERY

LABORATORY STIRRER — 7609A — A constant speed gear drive stirrer, suitable for the heavier laboratory mixing operations. Induction type motor 110V AC only, chuck speed 287.5 r.p.m. Torque 3.0 inch lbs., 1/50 h.p., ball bearings, inclosed gears, forced air circulation, push button switch. **\$34.50**

UNIVERSAL STIRRER — 7605 — An inexpensive, direct drive stirrer suitable for general laboratory use. Built in rheostat control. Speed 0-5000 r.p.m. 110V AC-DC. **\$17.25**

PALO PIGMY STIRRER — 7605C — A midget laboratory stirrer with an unusual amount of Torque for a stirrer of this size, suitable for light mixing. Speed control, 0 to 5000 r.p.m. **\$10.50**

LABORATORY STIRRER — 7605B — A heavy duty table top stirrer, rheostat provides smooth speed control over full range — continuous duty motor 110V AC-DC. 1/75 h.p. — 0-8000 r.p.m. at no load, ball bearing forced air circulation. **\$23.50**

All Palo-Myers stirrers equipped with solid brass chuck-cadmium plated — true running — 1/4" capacity.

Scientific Equipment and Supplies

PALO-MYERS INC.

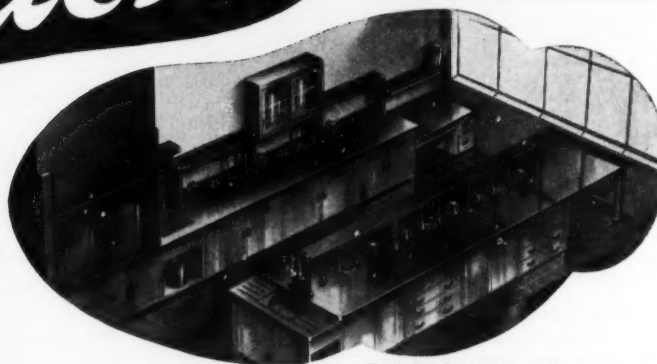
81 Reade St.

New York 7, N. Y.

When inquiring specify CP A5839 — see handy form pages 2-3

Sheldon

LABORATORY EQUIPMENT



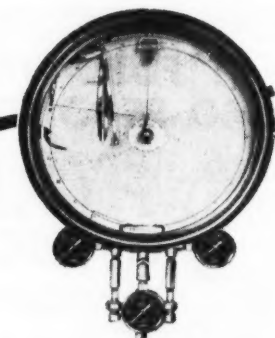
Typical Industrial Laboratory

SHELDON'S long, continuous, and successful experience; efficient planning service, and unsurpassed production facilities combine to provide the utmost in utility and economy in Laboratory Equipment. Let SHELDON Planning Engineers help you plan your research and control Laboratories.

SHELDON'S new Industrial Catalog for Chemical and Physical Laboratory, X-ray, Metallographic and Dark Room Fixed Equipment is now on the press. Reserve your copy today.

E. H. SHELDON & COMPANY
MUSKEGON, MICHIGAN

When inquiring specify CP A5838 . . . see information request blank, pgs. 2-3



QUICK SOLUTION to Humidity Problems!

Wherever humidity must be held constant — or moisture content of materials must not vary — the wide range of Foxboro Humidity Instruments offers an easy means of getting results.

Direct-reading Foxboro Recorders give exact knowledge of conditions at all times. Trouble-free Foxboro Humidity Controllers will maintain desired conditions accurately, automatically. Available in membrane or wet-and-dry bulb types... controllers either electric or pneumatic-operated.

Write for complete Bulletin 188. The Foxboro Company, 190 Neponset Ave., Foxboro, Mass., U. S. A.

FOXBORO HUMIDITY
INSTRUMENTS

When inquiring specify CP A5840 — see handy form pages 2-3



**"You CAN
take it with you..."**



**if it's a
BROOKFIELD
SYNCHRO-LECTRIC
VISCOSIMETER**

Making Viscosity tests at point of process is a snap with the Brookfield Viscosimeter. All you need is a convenient electrical outlet and you're set to take readings of high accuracy in 30 seconds.

Readings given directly in centipoises over wide ranges. Temperatures up to 600° F. No adjustments necessary. Requires no technical skill.

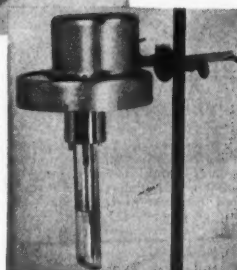


PORTABLE!
USE IN PLANT OR LAB



Same instrument can be used in both plant and lab. Use as a portable instrument shown at left. Operates on 60 cycle 110 volt current.

When instrument is needed for stationary use only it may be mounted on a rod clamp as shown at right. Handles are interchangeable.



BROOKFIELD
ENGINEERING LABORATORIES
BOX 603-P, SHARON, MASS.

When inquiring specify CP A5841
— see handy form pages 2-3

Instruments

ounce of liquid electrolyte. Polarization in the cell causes hydrogen to be deposited on the carbon pole. When a gas sample containing oxygen is passed through the hollow carbon electrode, diffusion through the porous carbon causes the oxygen to combine with the "electrolytic hydrogen" reducing the internal resistance of the cell and causing its current and voltage output to be increased. A direct reading meter, having a linear scale indicated the percentage of oxygen in the sample. Unit is available in the following ranges: 0 to 0.5%, 0 to 5%, and 0 to 10%, 0 to 25%. Sample is pushed through the instrument under a constant pressure of less than 12 inches of water by means of an external motor-driven pump. At higher constant pressure the gas readily flows unassisted. Both calibration and zero-adjusting circuits, independent of each other, are provided. Provision is also made for attachment of an electronic recorder or galvanometer potentiometer recorder to produce a permanent and graphic record of oxygen concentrations. Instrument is contained in a metal case suitable for either surface or flush-panel mounting and is designed for permanent installation and continuous operation. Bulletin No. DW-3 illustrates and describes the instrument.

MINE SAFETY APPLIANCES CO., Dept. CP, Brad-dock, Thomas, and Meade Sts., Pittsburgh 8, Pa.

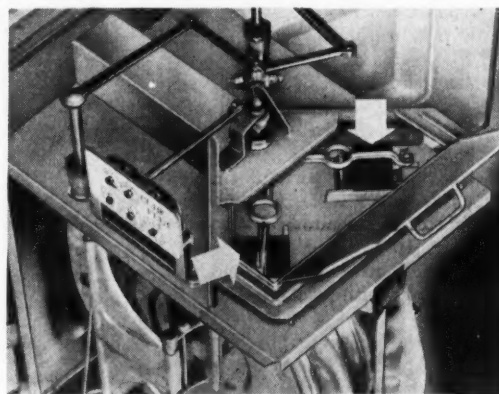
When inquiring specify CP A5842 — see handy form pages 2-3

Gas Meter Valve Is Self-Lubricating

*Available in slide or circular motion types
for all makes of meters*

Uses — Valve is applicable to gas meter operation.

Features — Chief advantages are self-lubricating characteristics that lengthen the life of both the valve and mating surface; immunity to chemical attack; dimensional stability



No drag gas meter valve

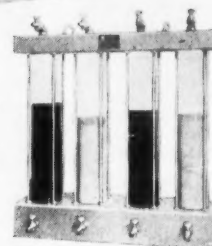
that provides dependable accuracy and complete freedom from gumming, sticking or warping and are quiet in operation.

Description — Valves are constructed of carbon-graphite, and are supplied in slide or circular motion types for all makes of meters. Complete details or descriptive literature will be sent on request.

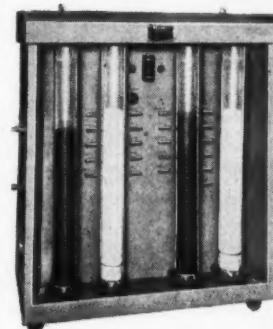
MORGANITE INCORPORATED, Dept. CP, 3304 48th Ave., Long Island City 1, N. Y.

When inquiring specify CP A5843 — see handy form pages 2-3

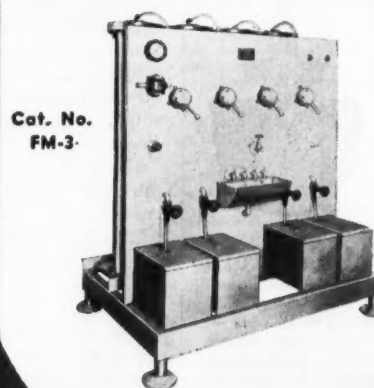
for PURER DE-IONIZED WATER at LOWER COST BARNSTEAD'S "double action" 4-bed WATER DEMINERALIZERS



Cat. No.
FM-0



Cat. No.
FM-1



Cat. No.
FM-3

These improved Demineralizers are the result of intensive research in ion-exchange water purification by BARNSTEAD engineers. They are what you might expect from 70 years of leadership in water purifying equipment and our usual high quality workmanship. Like all Barnstead equipment they provide the maximum purity with lowest operating cost and trouble-free operation.

Employing two cation resin beds and two anion resin beds they deliver water of more than twice the purity of two-bed models. These four-bed models also "stay on the line" longer between regenerations — usually nearly three times as long as two-bed units. This represents not only savings in material, but much less work for the operator.

There are thirteen standard models in the complete line in capacities of from 3 to 1000 gallons per hour. Whatever your need for de-ionized water remember you get greater purity, lower cost, and operating advantages no other equipment can offer with a Barnstead "Double-Action" unit.

Cat. No. FM-0. A compact bench model for Laboratories and small industrial needs. Brings the advantages of higher purity and greater economy to the small and moderate user of de-ionized water. Capacity from 3 to 12 gallons per hour.

Cat. No. FM-1. Portable floor model mounted on casters. Complete with all operating valves, self-contained regenerant solution tanks, and electric indicator light to show when regeneration is needed. Capacity from 7 to 30 gallons per hour.

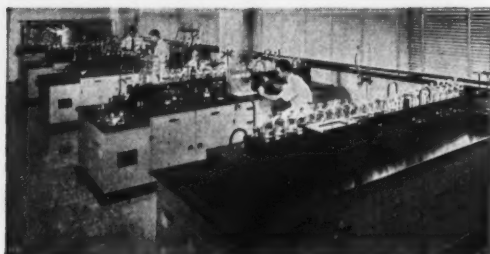
Cat. No. FM-3. Ruggedly built unit for industrial use, this is the finest de-mineralizing equipment available. Incorporates many Barnstead improvements in design. Capacity from 20 to 1000 gallons per hour.

Send for Bulletin 112

Barnstead
STILL & STERILIZER CO. Inc.

66 LANESVILLE TERRACE, FOREST HILLS, BOSTON 31, MASS.

When inquiring specify CP A5844 — see handy form pages 2-3



**BUILT like "CUSTOM-MADE"
PRICED like "READY-MADE"**

Kewaunee LABORATORY FURNITURE

Kewaunee Laboratory Furniture incorporates the quality and convenience you'd expect only from "custom-made" furniture. But it's priced like "ready-made" because it's built in quantity. For full flexibility, Kewaunee Laboratory Furniture is available in ready-made units of standard size. Kewaunee units are interchangeable and match exactly... you simply select and combine the units you need. As new pieces are added, your laboratory "grows gracefully." Working surfaces are of KemROCK for defiant resistance to acids, alkalis, solvents, abrasion and shock.

Modernize your laboratory the Kewaunee way. WRITE—

INDUSTRIAL DIVISION

Kewaunee Mfg. Co.

C. G. Campbell, President

5011 S. Center St., Adrian, Mich. • Representatives in Principal Cities

When inquiring specify CP A5845—see handy form pages 2-3

*these ELECTRONIC
stainless steel FINGERS*

Step Up Production
Reduce Waste and Loss

By Preventing

Overflow of tanks
Draining of boilers
Air binding of pumps
Burning out boiler
tubes
Burning processing
pots
Water contamination

Faratron Liquid Level Controls

Just two polished stainless steel rods—that's all—in the vat, tank, boiler, processing kettle, freezer, pasteurizer, etc., to control signals or operate pumps or valves; they are constantly on duty—need no servicing—and are easy to install.

If you have any liquids—hot or cold—in any type of container—to control, you should have our Bulletin 457. Write for it today.

Lumenite Electronic Company

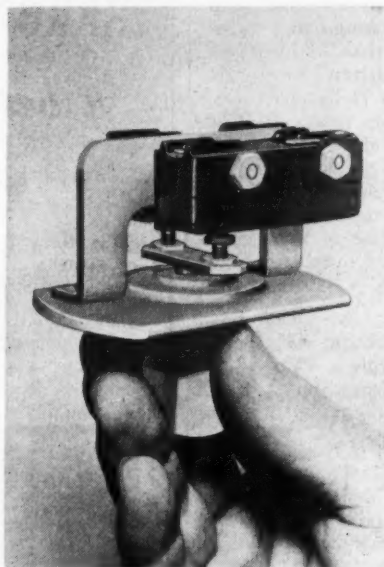
407 S. Dearborn Street Chicago 5, Ill.

When inquiring specify CP A5846—see handy form pages 2-3

Instruments

Switch Provides Independent Control Over Two Circuits, Two Pressures

Standard line of pressure switches includes differential, special device, low pressure



Two-circuit, two-pressure "ID"
Industrial Differential switch

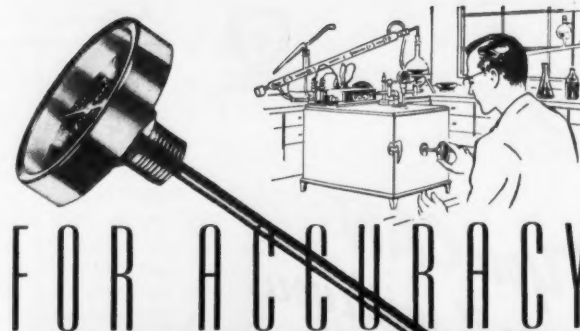
controls heating element. "SD" or special device switches, for transforming mechanical impulses into electrical; used to control pressure of steam boilers, pressure cookers, air systems, and to monitor heating elements, turn on or off cooling fans in ventilating systems. "LP" or low pressure switches, used to control low pressure blower systems and vacuum-filling operations; for regulating protective systems on expensive machine tools and dies; as a water level control; for aircraft application such as air speed indication, oil level control, cabin pressure regulation; and where small, differential pressures must be detected.

Features—"ID" or industrial differential switch: circuit "A" can be set to operate an "on-off" device for normal operation, leaving circuit "B" free to operate an alarm or cut-off when excessive pressures are reached. In its application to steam heaters, described above, it insures modulated, uniform rate of heat supply with maximum BTU utilization.

Circuits for both ID and SD switches are available to operate on pressures from 1 to 17 psi, and for LP switches, from 0" to 30" water pressure, vacuum, or both. In all cases, nominal value of pressure differential between "on" and "off" position is held to close tolerances. ID and SD switches may be specified between 1 and 10 psi; LP switches between 0.3" and 10" water pressure. With ID and SD models, similar switches may be supplied to operate at pressures to 200 psi. All switches are calibrated at factory, but special screws are conveniently located for installation adjustment. When calibrated to position, LP switch can be mounted vertically, horizontally, or upside-down.

Description—ID and SD switches: maximum current capacities 10 amps. at 120 volts AC. Pressure connection, 1/4" standard female pipe thread. Contacts are enclosed, snapaction. Spot welded brackets, brazed to frame. Cop-

Uses—Pressure switches for pressure-operated controls in the chemical and food processing, automotive, aviation, air conditioning, refrigerating, heating and general industrial fields. "ID" or industrial differential switches for independent control of two circuits at equal or different pressures; used on electrically-operated steam heaters, etc., where circuit "A" operates circulating fan and circuit "B"



PRECISION DILLON THERMOMETERS OFFER
THE FINEST IN SCIENTIFIC HEAT CONTROL

These carefully engineered instruments can be screwed into tanks, boilers, stacks, pipes, etc. Come in stem lengths of 3" or 9" with special lengths to order. Dials are 3" or 5" with large, easy to read figures. Made of 18-8, acid resistant stainless steel. FOUR ranges: 0-200° F., 50-300° F., 150-750° F., 200-1000° F. Also available in Centigrade equivalent. Dillon Engineers are glad to adapt this unit to your manufactured products. Write today for folder and low price schedule.



the DILLON dial
STAINLESS STEEL
thermometer

W. C. DILLON & CO. 5417 W. HARRISON ST.
CHICAGO 44, ILLINOIS

When inquiring specify CP A5847—see handy form pages 2-3

*This practical test for
SURFACE WEAR RESISTANCE
...provides the facts in minutes*



The TABER ABRASER is easy to operate
... gives a permanent, accurate rating

Duplicating—in measurable terms—the rubbing abrasion encountered in actual service, the Taber Abraser enables you to determine in advance the inherent surface wearability of paints, lacquers, plating, textile, leather, rubber, metals and many other materials. Saves time required for wear performance tests—gives a permanent, accurate value rating for research studies as well as for production control.



YOURS on request—Manual explaining fully the Taber Method and the reasons why it pays to pre-test. (Also included—brochure on stiffness and resilience testing with the Taber V-5 Stiffness Gauge.)

TABER INSTRUMENT CORP.
111 Cp Goundry St., North Tonawanda, N. Y.

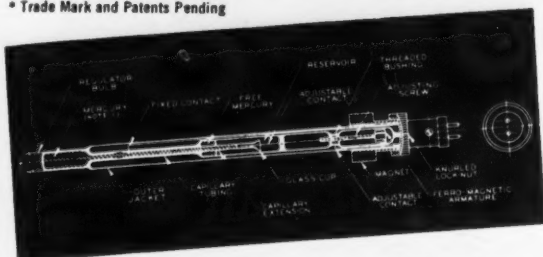
The Taber Test Proves What Wears Best!

When inquiring specify CP A5848—see handy form pages 2-3

NEW PRINCO "MAGNA-SET"*

High-Sensitivity, Adjustable MAGNETIC THERMOREGULATOR

* Trade Mark and Patents Pending



- Permits of changes in temperature as slight as 0.005° C.
- Sensitivity to and beyond $\pm 0.02^\circ$ C.
- Constancy of Performance
- Utmost Simplicity of Adjustment

For complete details, write today for
Princo Bulletin "T"

PRECISION
THERMOMETER COMPANY
PRINCO
PRECISION INSTRUMENTS FOR INDUSTRY

1404 Brandywine Street, Philadelphia 30, Pa.

When inquiring specify CP A5849 — see handy form pages 2-3

YOU'RE ALWAYS SURE With A LIQUIDOMETER



WRITE for COMPLETE DETAILS

"LIQUIDS WORTH STORING ARE WORTH MEASURING"

THE **LIQUIDOMETER** CORP.
38-18 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

When inquiring specify CP A5850 — see handy form pages 2-3

Instruments

per brazed steel stud, tinned phosphor bronze bellows. ID frame is cadmium plated, SD frame electro-plated. LP switch: current capacity 6 to 10 amps. at 120 volts. Grommet attached to base can be supplied with disconnect plug or standard $\frac{1}{2}$ " female pipe thread. Mounting is single-hole, by $\frac{3}{8}$ -18 threaded stud. Copper flashed steel frame, electro-tin plated to resist corrosion. Removable steel cover, copper flashed and gray enameled. Tinned, phosphor-bronze bellows. Pipe tap sizes on ID, SD and LP switches optional on quantity orders.

COOK ELECTRIC COMPANY, Dept. CP, Chicago 14, Ill.

When inquiring specify CP A5851 — see handy form pages 2-3

★

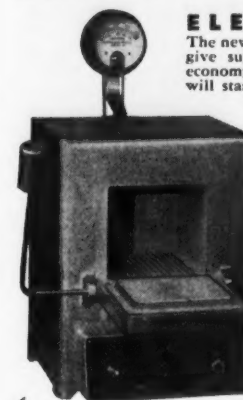
16-Page Booklet Explains A-B-C's of Turbo-blowers, Rotary Compressors

The A-B-C's of turbo-blowers, rotary compressors and vacuum pumps are explained in a 16-page, illustrated booklet for student training. Besides describing such units, how they operate and how to figure them, emphasis is placed on the importance of submitting complete information in order to figure blowers correctly. Charts show pressure volume, influence of water vapor on volume, and correction curves for volumes to maintain constant air weight despite changes in temperature and barometric pressure.

ALLIS-CHALMERS MFG. CO., Dept. CP, 677, Milwaukee, Wis.

When inquiring specify CP A5852 — see handy form pages 2-3

NEW TEMCO MODEL CEA



ELECTRIC FURNACE

The new MODEL CEA has been designed to give superior performance, with ease and economy of operation, at a low initial cost. It will stand hard use and is an ideal furnace for general laboratory purposes, heat-treating and small unit production.

SPECIFICATIONS

Temperature Control — Any temperature from 500° F. to 2000° F. can be selected and automatically maintained with TEMCO variable temperature control.

Pyrometer — Indicating type calibrated in both Fahrenheit and Centigrade scales.

Dimensions — Inside 4 $\frac{3}{4}$ " wide, 4 $\frac{1}{4}$ " high, 6" deep. Outside 12" wide, 15 $\frac{1}{2}$ " high, 14 $\frac{1}{2}$ " deep.

Prices Model CEA Complete
For 115 V.—A.C. only...\$80.00
For 115 V.—A.C. & D.C. 85.00
For 230 V.—A.C. only... 85.00

- Heats up to 1500° F. in 30 minutes.

- Can be operated continuously up to 2000° F.

- Embedded heating element protected against damage and chemical deterioration. Muffle core easily replaceable.

- Heating element, special high temperature alloy, completely surrounds heating chamber assuring the most uniform distribution of heat.

- Insulated with highly efficient, light-weight materials cast permanently into furnace body.

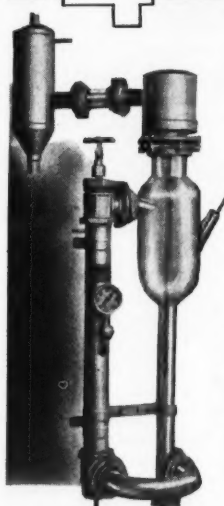
Other sizes available

See your supply house or write for literature

THERMO ELECTRIC MFG. CO. 476 W. Locust St., Dubuque, Ia.

When inquiring specify CP A5853 — see handy form pages 2-3

4 New EQUIPMENT DEVELOPMENTS FOR YOUR LABORATORY



Reflecting the latest technological developments in laboratory techniques for vital research, the four units shown below are representative examples of the versatility of "Precision" Equipment Engineering. If you have a research problem, you will undoubtedly find the solution among the more than 3,000 items of "Precision" manufacture. Keep abreast of these latest developments by making sure your name is on our mailing list.

"Precision" Laboratory Evaporator

The evaporation of solutions for the purpose of reducing volumes and concentrating solids is one of the more frequently encountered operations common to many production and research problems. However, many laboratories still carry on with the out-moded steam cones and round bottom flasks as basic equipment. It will duplicate closely results obtained with commercial-sized tube evaporators. Write for further details.

"Precision"—Blaine Air Permeability Fineness Tester

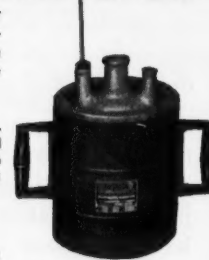
Developed for measuring the fineness of granular materials by means of the air permeability method, this apparatus is analogous to the U tube viscometer in which the liquid in the U tube provides the pressure difference and also serves to indicate the volume of flow. Send for Bulletin A360-D giving theoretical discussion by R. L. Blaine, Associate Metall. Engineer, National Bureau of Standards. Reprinted from A.S.T.M. Bulletin.



See your laboratory supply dealer.

"Precision" Safety Heaters

Specifically designed for the difficult job of heating complex glassware columns, delicate reflux condensers and other glassware. Important features include freedom from fire hazards, conservation of samples, easy handling, quick responsive heating. Send for Bulletin H-1650-D.



"Precision" Constant Temperature Circulating System

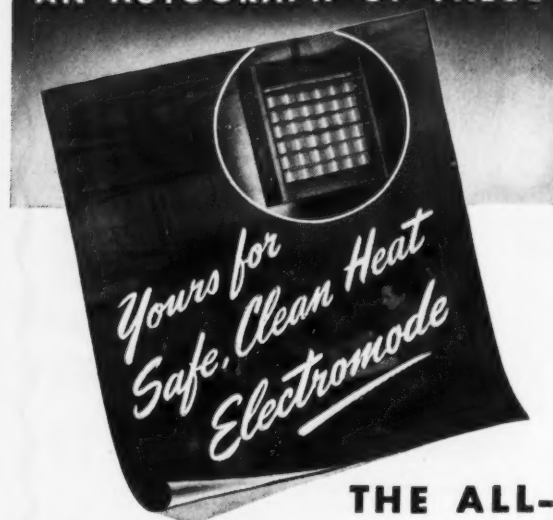
Since refractive index of many liquids will change as much as ± 0.005 , with a change of 1° C. in temperature, it is imperative that refractometer liquid cell be kept at a constant temperature. The Precision constant temperature circulating system is the first thermostatically controlled, self contained unit to be offered. Built-in heater, circulating pump and adjustable thermostat. Write for complete details.



PRECISION SCIENTIFIC COMPANY
1736-54 N. Springfield Ave., Chicago 47, U.S.A.
Engineers and Builders of Scientific Research and Production Control Equipment

When inquiring specify CP A5854 . . . see information request blank, pgs. 2-3

AN AUTOGRAPH OF VALUE



THE ALL-ELECTRIC UNIT HEATER

The name Electromode on your plant Unit Heaters is assurance of economical heating available where and when it is needed without expensive piping, piping connections, insulation, and costly maintenance. Electromodes are easily and quickly installed wherever circuit wires can be run. They are also simple to remove and relocate as need determines. Factory areas, stockrooms, warehouses, isolated buildings, departments run overtime when central heating is off, are only a few places where Electromode all-electric Unit Heaters do the job better, giving greater value per dollar invested.

All hazards of fire, shock or explosion are eliminated with an Electromode installation. The sheathed heating element embedded in a one-piece finned aluminum casting is completely isolated from any external contacts; there are no exposed glowing resistors, no incandescent hot wires. All electrical energy is converted 100% into heat and no current is used when not "on". Control may be manual or automatic. Your Electrical Wholesaler can help you in selection of proper capacities. ELECTROMODE CORPORATION, Rochester 3, N. Y.

Latest Bulletin 45-U and Heating Survey Form sent promptly upon request.



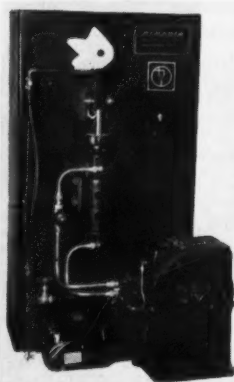
ELECTROMODE Electric Unit Heaters

When inquiring specify CP A5855 — see handy form pages 2-3

Instruments

Hydraulic Follow-up Has High Power

Operates from thin metal cams without wear



Air-coupled hydraulic follow-up system

Uses — This system is useful where it is necessary to perform a complex action at high power, when the initial action is imposed by a low power system.

Features — Power amplification may be a few pounds or several tons with practically no input force. Torque necessary to move the template cam is practically nothing. The system is stable and has an accuracy of about two one-thousandths of an inch, with a speed of twenty inches per minute, in its standard design.

Description — In combination with a low pressure air supply and suitable nozzle arrangement a constant pressure regulator is employed to actuate a hydraulic cylinder. Movement of the cam or template changes the air leading pressure to the constant regulator which in turn causes the hydraulic cylinder to follow the initial cam movement. Complete details available on request.

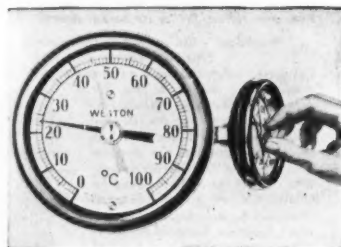
ASKANIA REGULATOR COMPANY, Dept. CP, 1603 S. Michigan Ave., Chicago, Ill.

When inquiring specify CP A5856 — see handy form pages 2-3

★

Thermometer Indicates Maximum And Minimum Temperatures

All metal unit has three or five inch scale with stem lengths from two and one half to 28 inches



Max-Min thermometer

Features — An indication of maximum or minimum temperatures reached is provided in this device. The unit has an auxiliary red index which is manually set by a finger knob that protrudes from the center of the scale glass.

Description — When a record of the lowest temperature reached is desired, this index is placed to the low side of the temperature pointer. The pointer will move the index to the lowest temperature reached during any operating period, and the index will remain at that low point until manually re-set. For a record of the highest temperature

Uses — Thermometer provides an indication of maximum and minimum temperatures and is useful on such equipment as transformers, sterilizers, ovens, as well as many processing operations.

STRATEGIC STOCKPILES

for Your Convenience...



Scattered throughout the United States and Canada in convenient locations are stocks of Pyrex, Vycor and Corning brands of laboratory glassware. These are the inventories your laboratory supply dealer carries... carries for only one reason—YOU.

In a sense each of these inventories is personal. For all are different. Each is built-up and maintained for the selected group of customers served by a particular laboratory supply house. Stocks carried are based on the dealer's knowledge of his customers' needs and are always as complete and as well balanced as factory shipments permit. If your dealer hasn't a particular item, you may be sure the factory hasn't it either. That is why Corning Glass Works urges you to contact your dealer whatever your requirements may be. His is a professional service to professional men. He is the one who can serve you best. The closer you work with him the more time and money you save.

Corning Glass Works is proud of its dealers and wants all users of all its laboratory glassware lines to learn to know their nearest dealers better... and to use their services to the fullest extent.

"Pyrex," "Vycor" and "Corning" are registered trade marks and indicate manufacture by CORNING GLASS WORKS • CORNING, NEW YORK

PYREX

FOR ALL-AROUND USE... YEAR 'ROUND ECONOMY

CORNING
Research in Glass

When inquiring specify CP A5857 — see handy form pages 2-3

MOISTURE ENGINEERING

with the KATHABAR System automatically and accurately provides

THE PROPER Humidity

— independently of temperature —

for processing operations in the manufacturing of:

DRUGS, PHARMACEUTICALS, CHEMICALS, FOODS, OR ANY PRODUCT OR MATERIAL AFFECTED BY EXCESS HUMIDITY CONDITIONS.

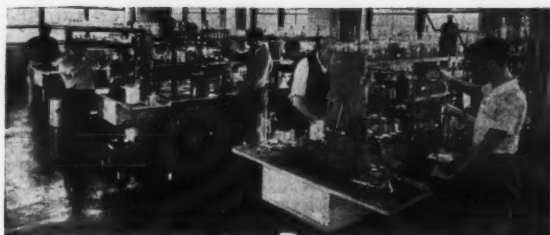
... Write for information.

SURFACE COMBUSTION • TOLEDO 1, OHIO

Kathabar System of
HUMIDITY CONTROL
ADVANCED AIR CONDITIONING

When inquiring specify CP A5858 — see handy form pages 2-3

CHEMICAL PREVIEW



SPECIALIZED ENGINEERING ASSISTANCE

Alberene Engineers can save you valuable time—possibly money as well by reason of their comprehensive knowledge of the design, re-design, fabrication and installation of laboratory equipment.

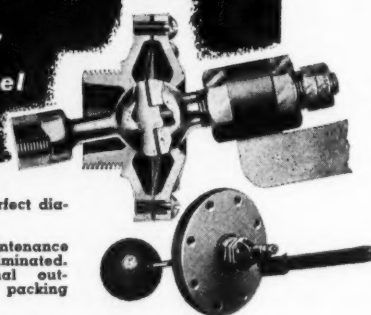
Over 50 years of service in the finest laboratories has proved Alberene Stone's exceptional durability—performance—and year-after-year economy. Write for Laboratory Catalog. Alberene Stone Corporation of Virginia, 419 Fourth Ave., New York 16, N. Y. Sales Offices in Principal Cities. Quarries at Schuyler, Virginia.

ALBERENE STONE LABORATORY EQUIPMENT

When inquiring specify CP A5859—see handy form pages 2-3

DAVIS DIA-BALL TRANSMISSIONS

...for
sensitive,
accurate
liquid level
control



• **LEAKPROOF.** Perfect diaphragm seal.

• **PACKLESS.** Maintenance nuisance virtually eliminated. Replaces conventional out-board ball bearing packing box.

• **MINIMUM FRICTION.** Improved ball and socket construction assures accurate transmission of the slightest effort.

• **Straightlined Power** always transmitted in a straight line, in the same vertical plane. No breaks or offsets assures utmost in accuracy and sensitivity.

• **Maximum Protection** against leakage of inflammable and highly volatile liquids.

The Davis Dia-Ball transmission unit is an improved packless unit for use on Davis Liquid Level Controllers, and Levers and Solenoid Operated Valves. Send for bulletins for complete details.

DAVIS REGULATOR COMPANY

2562 S. WASHTENAW

CHICAGO 8, ILL.



**DAVIS REGULATOR
COMPANY**

When inquiring specify CP A5860—see handy form pages 2-3

Instruments

reached, the index is simply set at the high side of the pointer. It is now available in two models, 221M and 222M, with scale diameters of three and five inches respectively. It is also available in all the usual ranges and in stem lengths from two and one-half to 48 inches. Complete information is available from the manufacturer.

WESTON ELECTRICAL INSTRUMENT CORPORATION, Dept. CP, Newark, N. J.

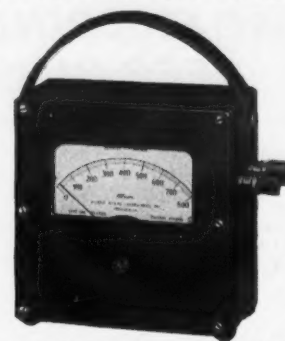
When inquiring specify CP A5861—see handy form pages 2-3

Dust Collectors Save Money And Reduce Accidents

The importance of dust collection is emphasized forcibly in a booklet in which it is conservatively figured that during the last 20 years 28 million dollars were lost in explosions and fires occurring in dusty atmospheres. Dust collection is also important in relation to by-product reclamation. A third aspect is that of employee health. Certain airs contain small particles which when breathed into the lungs are quite damaging to delicate tissue structure. Four styles of machines are covered in the booklet and an announcement states that the company is in a position to render design changes which might prove necessary to meet certain demands. Literature is available on request.

RICHMOND MANUFACTURING COMPANY, Dept. CP, Lockport, N. Y.

When inquiring specify CP A5862—see handy form pages 2-3



**TYPE
1500**

Alnor PORTABLE PYROMETER

This compact, lightweight pyrometer is mounted in a magnetically shielded metal case, providing for accurate temperature readings in shop and general industrial use as well as in the laboratory.

The pyrometer movement is the Alnor double air gap type with Alnico magnet. The case is heavy gauge sheet steel, providing magnetic shielding so that Type 1500 may be used on a steel top table, near other magnetic instruments or in strong alternating fields without suffering the unpredictable errors experienced with unshielded pyrometers.

Type 1500 is available as a single circuit pyrometer with a choice of ten scale ranges, 0-400 to 0-3000 F, or as a double or triple range instrument built to order with scales as specified. Centigrade scales can be furnished. Write for descriptive bulletins.

ILLINOIS TESTING LABORATORIES, INC.
420 NORTH LA SALLE STREET • CHICAGO 10, ILLINOIS

When inquiring specify CP A5863—see handy form pages 2-3

There's a Marsh instrument for every process—

**PRESSURE GAUGES
OF ALL TYPES**



The Mastergauge, illustrated above, is standard bearer for the broad Marsh line of pressure, vacuum, and compound gauges. It represents Marsh accuracy and stamina in its highest development.

The Marsh Diaphragm Gauge, opposite—used where the pressure medium cannot be permitted to enter the bourdon tube—is typical of many special types of gauges.



**DIAL
THERMOMETERS FOR
EVERY PURPOSE**

Practically all service conditions and temperature ranges are covered by Marsh Dial Thermometers. A typical bi-metal type is shown at the right below, and a distant reading thermometer of the bourdon tube type is illustrated at the left.



Whatever the need, there is a Marsh pressure gauge or dial thermometer that will meet it... better. Try Marsh instruments where others have failed. The tougher the application the more welcome the opportunity to demonstrate Marsh accuracy and stamina!

Every range of pressure is covered by Marsh Gauges. Every service condition—such as pulsating pressure, or excessive vibration—is met by special types of movements. Every pressure medium is provided for by the range of materials available in bourdon tubes. The Marsh line of Dial Thermometers is equally comprehensive. It includes both bi-metal and bourdon tube types for practically all temperature ranges.

Marsh engineering service assures proper use of Marsh instruments. Ask for recommendations covering your requirements.

JAS. P. MARSH CORPORATION
2095 Southport Ave., Chicago 14, Ill.

MARSH

"THE STANDARD OF ACCURACY"

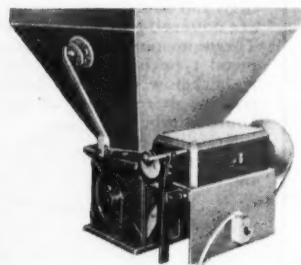
When inquiring specify CP A5864... see information request blank, pgs. 2-3



OMEGA

ROTOLOCK FEEDERS

The non-flooding qualities of the Omega Rotolock make it especially suitable for feeding very fine, powder dry materials such as hydrated lime, activated carbon, clay, etc., which have a tendency to flood from deep bins. With Omega Rotolocks you can feed . . . uniformly, continuously, dependably.



Omega Rotolock Feeder with standard hopper and agitator. Variable speed drive gives precise, infinite adjustment of feeding rate over a 100 to 1 range. Dust removers, dissolving chambers and automatic proportioning controls are available.

Write for Bulletin

OMEGA PRODUCTS

Volumetric Feeders	Lime Slaking Equipment
Gravimetric Feeders	Bucket Elevators
Solution Feeders	Laboratory Stirrers

OMEGA MACHINE COMPANY
(Division of Builders Iron Foundry)
41 Codding St. Providence 1, R. I.

When inquiring specify CP A5865 — see handy form pages 2-3

Instruments

Electronic Tachometer Used In Production Testing

Measures speeds from 300 to 50,000 rpm.
Weighs only 19 lbs.



Electronic tachometer in use

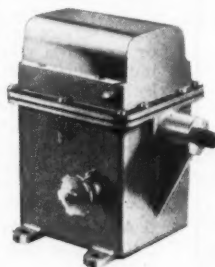
Uses — This electronic tachometer is useful for the measurement of rotating speeds from 3000 to 50,000 rpm. It can be used to indicate the speeds of electric motors, machine tools, pumps, fans, blowers and other types of rotating equipment.

Features — Weighing only 19 lbs., the instrument is useful for the production testing of equipment instantaneously without the necessity for

any permanent attachments. The shaft to which the rotating disk is attached rotates on ball bearings and requires very little torque, and therefore the speed of the equip-

BARBER-COLMAN

POWER UNITS



Write for
Bulletin F-1912
"POWER UNITS"

TO POSITION VALVES, DAMPERS, AND OTHER UNITS

These POWER UNITS are ideally suited for industrial applications. They feature built-in limit switches and a high torque motor with gear reduction, oil submerged, for long life and dependable operation. Control action may be governed by a recording or indicating controller or other contact making control instruments.

POWER UNITS are available for "on-off", floating, and proportioning modes of control, including proportioning with manual or automatic resetting.

BARBER-COLMAN COMPANY
1201 ROCK ST. • ROCKFORD, ILL.

When inquiring specify CP A5866 — see handy form pages 2-3

A COMPLETE LINE OF OIL-TIGHT UNITS IN SURFACE MOUNTING STATIONS



• Square D's line of oil-tight units is now available in surface mounting, oil-tight enclosures for 1, 2, 3 or 4 units. The features which have made these units the predominating choice for built-in applications are just as valuable in these surface-mounting enclosures.

- + Proven oil-tight and coolant-tight by severe tests involving millions of operations.
- + Very compact units permit small enclosures with generous wiring space.
- + Flexibility. Pushbuttons, selector switches and pilotlights can be assembled in a wide range of combinations. Legend plates can be positioned for vertical or horizontal mounting.
- + Attachments for lock-out and maintained contact operation mount on standard units.

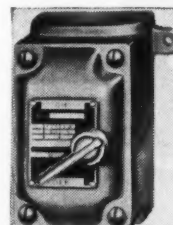
Write for details • Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin



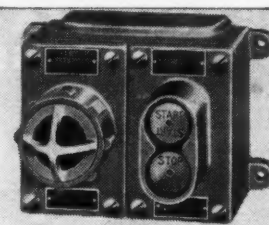
SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

When inquiring specify CP A5867 — see handy form pages 2-3



Explosion-proof switch



Explosion-proof pilot light and push button station

Somewhere in your plant, there are several spots where a combination of explosion-proof, vapor-proof or dust-proof switches, signal lights and push-button stations would simplify your problems.

That is where standardized, precision-made, and interchangeable Russell & Stoll Company fixtures and fittings can serve you well.

Recent developments include some of the largest explosion-proof and power panels ever assembled.



RUSSELL & STOLL COMPANY

EXPLOSION-PROOF, WATER TIGHT AND EVER-LOCK RECEP-
TACLES, PLUGS, CONNECTORS, SWITCHES AND FIXTURES
125 BARCLAY STREET • NEW YORK 7, N. Y.

When inquiring specify CP A5868 — see handy form pages 2-3

Instruments

ment being measured is not reduced by the use of the device.

Description — Unit consists of a small pick-up head, six feet of flexible cable, and a measuring unit with a panel-mounted indicating instrument reading directly in rpm. Either a low-speed or high-speed head can be used with the instrument. The low-speed head provides five speed ranges, 0-1000, 0-2000, 0-5000, 0-10,000, and 0-20,000 rpm, while the high-speed head provides three speed ranges, 0-10,000, 0-20,000, and 0-50,000 rpm. Each pick-up head consists of a light-interrupting disk and a phototube. Light shining upon the phototube through the openings in the rotating disk produces input signals which are then transferred to the measuring unit, which indicates the rpm of the equipment being tested. Additional information may be secured on request.

GENERAL ELECTRIC COMPANY, Dept. CP, Apparatus Department, Schenectady, N. Y.

When inquiring specify CP A5869 — see handy form pages 2-3

★

Timer Operates In All Conditions Of Temperature and Humidity

Available in ranges of $\frac{1}{2}$ cycle to 60 seconds. For 110 or 220 volt, 60 cycle operation



Promatic electronic timer

mined sequence—with either self-recycling or manual recycling.

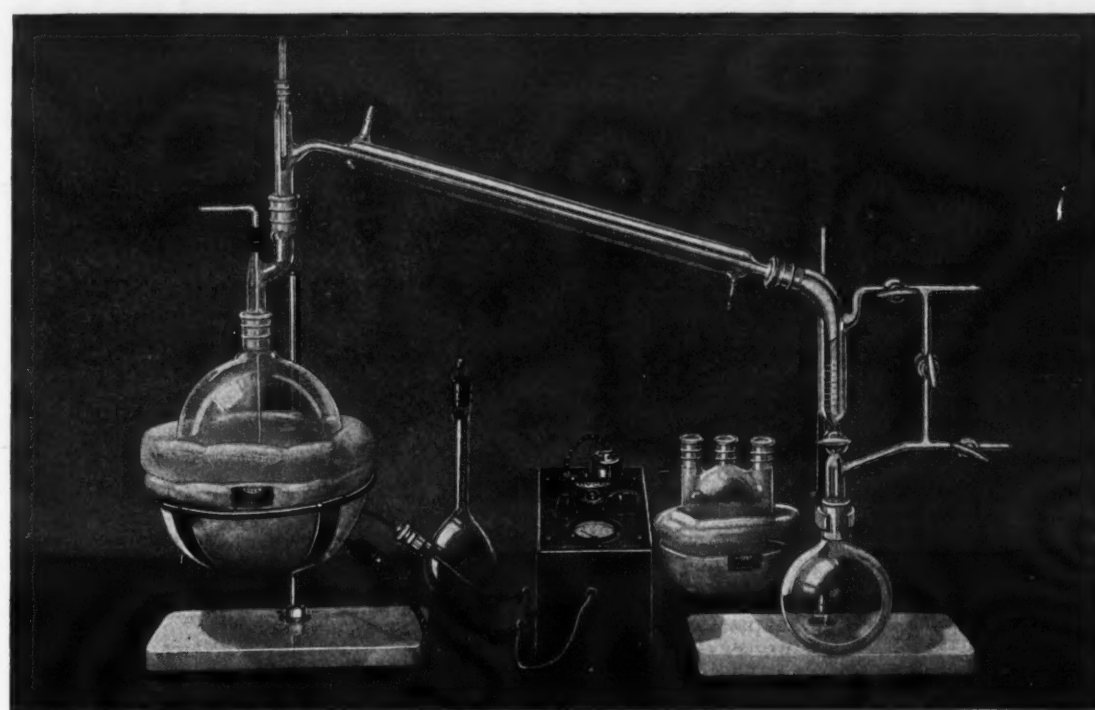
Description — Control of the timing period is accomplished by means of a plug-in type condenser unit and a variable resistor. The resistor control has a graduated dial. One condenser unit is supplied with each timer to obtain the timing period specified. Five timing periods are available, in ranges of $\frac{1}{2}$ cycle to 1.2 seconds, $\frac{1}{2}$ seconds to 8 seconds, $\frac{3}{4}$ seconds to 15 seconds, 1.5 seconds to 30 seconds, and 3 seconds to 60 seconds. Unit is available in both 110 and 220 volt types, 60 cycles, A.C. with relay contacts rated at 10 amperes. D.C. timers are available on special order. Units can be adapted at the factory for use on numerous non-timing applications—such as forward-acting photo-electric cell relays, reverse-acting photocell relays, and for use as a very sensitive relay.

GENERAL CONTROL COMPANY, Dept. CP, 1200 Soldiers Field Road, Boston 34, Mass.

When inquiring specify CP A5870 — see handy form pages 2-3

Uses — This electronic timer has application in industrial processes where either full automatic or semi-automatic control of the equipment, to which they are connected, is desired.

Features — Unit provides accurate control under virtually any condition of temperature and humidity. Two or more timers may be used to control a number of individually timed operations in a predetermined



GYCO ... The Improved Heating Jacket

GYCO Heating Jackets were developed to fill the need for a faster and more efficient laboratory heating device. They are constructed of glass cloth and insulated with layers of glass wool.

GYCO heating elements are made of Safeway electrical resistance heating wire, sewn directly to the inner surface of the jacket. *This intimate contact of the element with the vessel to be heated permits fast, economical operation and ease of constant control of temperature.* The heating element can be operated below the visible glow point causing very little oxidation of the heating wire and no overheating of the insulation. Therefore, the life of the GYCO Heating Jacket is greatly increased.

GYCO Heating Jackets are made to fit all standard flask

sizes and special sizes can be made to order. They are also available in tubular units for use on columns of varying size.

Since hemispherical jackets are most widely used, GYCO Jackets are standardized in that form. As an accessory, jacket tops are available which convert any GYCO Heating Jacket into a spherical unit. These jacket tops are available with elements for extra heat requirements or without elements for insulating purposes only.

All GYCO Jackets have a built-in iron constantan thermocouple ending in an "AN" type plug for hooking up to the pyrometer of the GYCO Pyro-tran. (This plug may be removed for use with any other pyrometer of similar type.)

Listed below are a few sizes and prices. For a complete description of all models, accessories and prices, write for our Bulletin C-100.

500 ml.	\$11.65
1 liter	14.80
2 liters	16.70
3 liters	21.45
5 liters	26.25



GYCO Jacket Tops make it unnecessary to dismantle apparatus when removing jacket. They convert a hemispherical jacket into a spherical and may be ordered separately.

GYCO Jackets are distributed exclusively by

SCIENTIFIC GLASS APPARATUS COMPANY, Inc.
Bloomfield, New Jersey

When inquiring specify CP A5871 . . . see information request blank, pgs. 2-3

No. 440



"VALUE PLUS" Standard Brass Gate Valves

Double Disc Rising Stem

WORKING PRESSURES:
125 pounds. Steam; 200
pounds. Cold Pressures,
Non-Shock.

RECOMMENDED FOR
general use on
steam, water, oil,
or gas lines.

Why CRANE 440's Give Value Plus

Note how much more rugged they are than usual "Standard" valves, assuring extra durability and safety under pressure and operating strains, expansion and contraction of piping.

Fully-guided, parallel seating disc reduces seat wear. Generous stuffing box stops stem leaks. Only high quality Crane brass is used in these all-brass valves. Handwheel is malleable iron.

IN SIZES FROM 1/4 to 3 in.—with handwheel or lock shield. Complete specifications in your Crane Catalog, page 16.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

EVERYTHING FROM . . .

CRANE

FOR EVERY PIPING SYSTEM

VALVES • FITTINGS • PIPE • PLUMBING • HEATING • PUMPS

When inquiring specify CP A5872 — see handy form pages 2-3

★ IDEAS ★

Industrial ingenuity constantly hatches new ideas, many of which can be applied to similar problems in other plants. The Editors have selected these ideas and developments because of their interest and possible application in specific plant problems. If you would like more information on any of these, write direct to the manufacturers.

Streptomycin Production Boosted By Deep Fermentation Process

Techniques in new Merck plant emphasize careful selection of equipment and instruments

The cover illustration shows the measuring of conditions of temperature, pressure, aeration rate, and time, relating to submerged growth method in the streptomycin pilot plant of Merck & Co., Inc., of Rahway, N. J. It serves to illustrate the importance of measurement and control of variables in the manufacture of such products as the recently developed antibiotics, of which streptomycin is one of the most effective. The proper selection of construction materials, a major factor in turning out a perfect product, is necessary not only from the standpoint of corrosion, but even more important to prevent contamination.

Streptomycin is an antibiotic derived from a soil micro-organism. This organism, a strain of *Streptomyces griseus*, was developed by Dr. Selman Waksman of Rutgers University in 1944. Crude concentrates of streptomycin broth were brought to Merck & Co., Inc. soon afterwards. In early laboratory tests, streptomycin was extremely effective in destroying disease germs. At the same time, medicinal scientists at the Mayo Foundation and other research centers were proving the drug a powerful aid in certain infection, primarily gram-negative types that occur in the urinary tract.

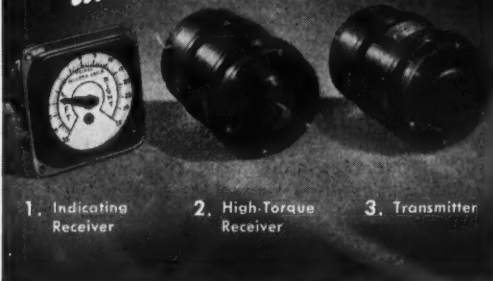
Up to this point all production had been by a laborious flask method that yielded limited amounts. Merck scientists experimented with the deep fermentation process which had been used so successfully in boosting the production of penicillin. Using tanks instead of flasks, the process was speeded up by agitation and aeration and more efficient nutrient broths were developed. Production of streptomycin is a complicated process of extraction, requiring the greatest care. It takes 50,000 tons of material plus 45,000,000 gallons of process water to produce 250 pounds of streptomycin powder. Production is started from living test tube cultures of the organism, *Streptomyces griseus*. These organisms are put through repeated stages of growth, in which they multiply themselves billions of times. This is done by introducing the microbes into flasks of nutrient broth, composed of numerous ingredients including peptone, dextrose, and meat extract. As the *Streptomyces griseus* multiplies, it is moved into larger and larger tanks. Complete sterilization is absolutely necessary and the utmost precautions are taken to prevent any contamination which might inhibit the formation of streptomycin. Valves are all steam-sealed and all pipe lines leading into fermenters are kept under steam pressure when not actually in use.

After several days of fermentation, the original quantity of soil culture attains maximum activity and produces approximately 1 pound of streptomycin, a mere trace of the total of 15,000 gallons of liquid. Should any contamination occur, or any part of the process be allowed to vary from the rigid operating conditions required, even this trace of streptomycin might be lost. Any variations in the temperature, pH, and the rate of air flow cause serious

difficulties. Recovery is accomplished in a series of five operations: (1) Removal by filtration of mycelia (actual mass of growth of streptomycin); (2) Extraction of streptomycin by absorption on activated carbon; (3) Acid treatment to redissolve the streptomycin from the carbon absorbate; (4) Concentration by evaporation and dehydration; (5) Precipitation followed by filtering and drying. This results in a crude product containing about 25 per cent streptomycin. After being re-dissolved in a solvent, the crude material passes through a special continuous purification process, where, finally, practically pure streptomycin is precipitated and then filtered. It is then dried in a vacuum dryer, dissolved to form a syrup, passed through biological filters, and finally piped into stainless steel flasks for refrigerated shipment to the finishing plant. At the finishing plant the streptomycin liquid is first blended and again passed through a biological filter, which removes all organisms and pyrogens, leaving an absolute sterile filtrate. This is placed in stainless steel trays and removed to freeze-drying cabinets. The dried powder is milled by stainless steel balls. Rooms are air conditioned and ultraviolet rays utilized to insure sterility. Streptomycin reaches the physicians in one-gram vials, sealed with a rubber stopper and aluminum cap.

PRODUCT OF THE MONTH

*New Remote Indicating
and Control System!*



1. Indicating Receiver

2. High-Torque Receiver

3. Transmitter

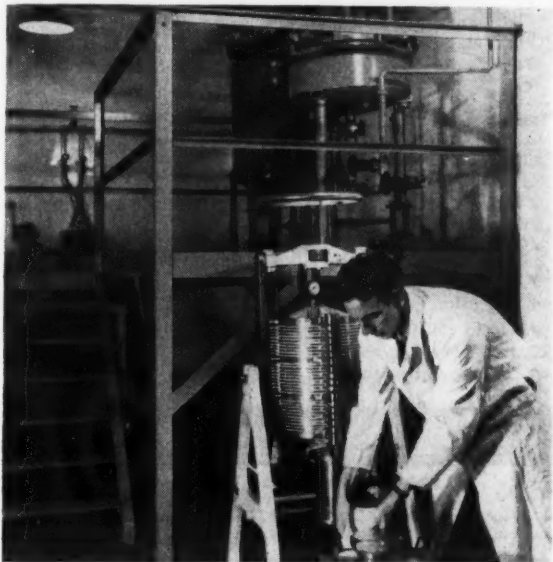
MILWAUKEE, WIS. — Allis-Chalmers announces new Remote Indicating and Control Equipment for general industrial use. Offering such exclusive advantages as: instant response without hunting or motorizing; no transmitter back torque; accuracy within $\pm 1^\circ$, the new system will have many applications in oil, steel, power, marine and other industries. Bulletin 14B6592 has the facts.

ALLIS-CHALMERS MILWAUKEE 1
WISCONSIN

When inquiring specify CP A5873 — see handy form pages 2-3

Ideas

A wide variety of equipment, materials and instruments are to be found in this streptomycin plant. Carbon steel is satisfactory for some use, although stainless steel is also employed. Pump impellers are rubber covered and many tanks rubber lined. Porcelain is used for many of the pipe and fitting requirements. Instrumentation is most important and in many cases each instrument installation has a complete auxiliary for emergency use. Rotameters measure flow throughout the entire operation, and temperature is maintained by a large number of controllers.



One of the filtration operations in making streptomycin
List price of streptomycin to physicians is now \$10.00 for one gram. It is anticipated that the price will be lowered as costs are cut by increased production. Greatly increased production is now being achieved in the completed Merck plant at Elkton, Va., and Rahway, N. J., but supply is still short, and distribution is entirely under Government control.

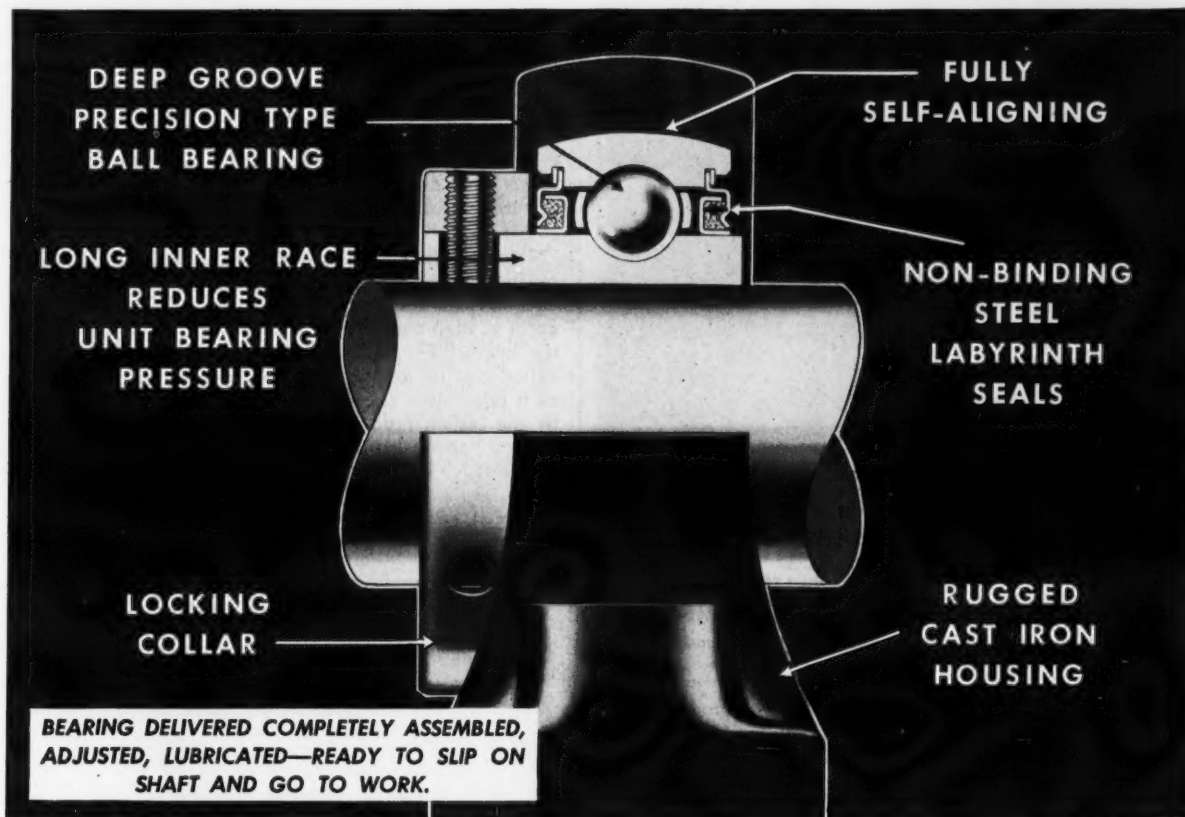
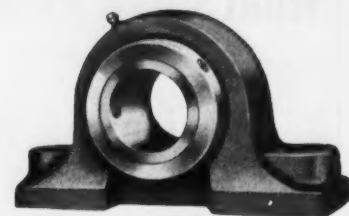
★

Cinnamon Substitute Made From Waste Oat Hulls

Experiments reported to American Chemical Society along with other research projects such as alcohol from wood waste

A cinnamon substitute derived from waste oat hulls may soon be commercially available to meet the shortage now faced by food, drug and cosmetic producers. In a paper presented by Dr. Carl Bordenca of the Southern Research Institute, Birmingham, Ala., experiments were reported on sixteen possible cinnamaldehyde substitutes, five of which were found to yield cinnamon-like tastes. The most promising of these was furanacrolein, a product derived in two simple steps from waste oat hulls. Another report of unusual interest concerns a strain of yeast which can produce the high yield of 64.5 gallons of alcohol from one ton of wood waste. Waste such as sawdust was hydrolyzed into sugar solutions and the sugars then were fermented by the special yeast into alcohol. The development was described in a report of Dr. Elwin E. Harris, Martha L. Hanon, Ralph R. Marquardt and Janet L. Bubl of Forest Products Laboratory.

A NEW BALL-BEARING PILLOW BLOCK in the Famous 30,000 Hour Line



DODGE

MISHAWAKA

THE SYMBOL THAT CAME TO LIFE

The man who walks into your factory wearing this symbol is the living embodiment of a service which gives you the correct answer to your problems in efficient mechanical transmission of power. He is the Dodge Transmissioneer.



Copyright, 1946, Dodge Mfg. Corp.

If you are looking for a practical anti-friction bearing for small shafts, operating under moderate load conditions, be SURE to investigate the new Dodge SC. It has everything—high precision, modern styling, rugged cast iron housing, locking collar, radial and thrust load capacity. Self-aligning and sealed against loss of lubricant or admission of dirt. It is a completely assembled, pre-lubricated, factory-adjusted unit which comes to you ready for installation and years of smooth, uninterrupted service.

This bearing is available from stock in shaft sizes ranging from 11/16" to 2-1/4". For prices and delivery call the Dodge Transmissioneer, your local Dodge distributor. Look for his name under "Power Transmission Equipment" in your classified phone book. Or write DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA

FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY, ETCHING COMPANY OF AMERICA, 1520 MONTANA STREET, CHICAGO 14, ILLINOIS

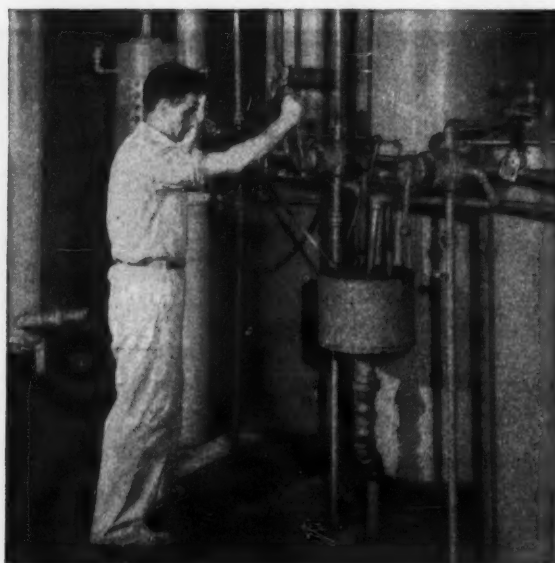
When inquiring specify CP A5874 . . . see information request blank, pgs. 2-3

What's new at



De-ionized Water!...

(the modern low-cost equivalent of distilled water)



TO OBTAIN PURE WATER for certain of its processes, the New York Quinine and Chemical Works, Inc. (NYQ) operates this ILLCO-WAY De-ionizer (600 gph) in its Brooklyn plant...another example of how leading concerns rely on De-ionized Water for quality manufacture.

In hundreds of efficient plants today, modern compact ILLCO-WAY equipment is producing pure water—the equivalent of distilled water, but costing 90% to 99% less than heat-distilled water!

That's the remarkable saving you make with ILLCO-WAY De-ionizing equipment. Water produced is *uniform* at all times...is daily meeting exacting standards in pharmaceutical, chemical, cosmetic and industrial plants.

Units are designed to meet your needs; flow rates from 12 gph (portable unit) up to 500,000 gph or more... Investigate this process today—write for latest literature.

WATER TREATMENT ENGINEERING

Illinois Water Treatment Co.
849-11 Cedar Street
Rockford, Illinois
7310-G11 Empire State Building
New York City



When inquiring specify CP A5875—see handy form pages 2-3

Ideas

Fog Dispeller Utilizing Calcium Chloride Clears Wide Areas

Tests in golden gate harbor demonstrate effectiveness and extremely low cost

"Nofog"—patented fog eliminator—in a test in Golden Gate channel cleared 16 square miles of fog. Two little machines costing about \$200 each have operated successfully at this proving ground. Fog is dispelled by changing the humidity of the surrounding area. The dew point of the atmosphere is so effected that it absorbs some of the fog and drops off the excess like rain. The inventor, Clellan Ross Pleasants, expects that this method will be used to keep airports clear and even afford weather control for large cities. "Nofog" can be shot from planes for emergency landings, set up to clear harbors or carried in rocket form and ships to clear paths ahead. An important feature is that the cost is unbelievably low. Special machinery was developed to vaporize the compound. "Nofog" contains colloidal carbon particles coated with calcium chloride or another powerful hygroscopic agent. Carbon particles are saturated with the water absorbing agent at high temperature in a burner. In the atmosphere, the hygroscopic agent absorbs the condensed water of the vapor, causing ionization of the particles. They thus repel each other over an exceptional wide area. Heat taken up by the carbon produces an upward radiation, carrying the air and vapor with it, expanding and reducing the relative humidity. The expansion causes further condensation

INTERNATIONAL

PORTABLE MIXERS
MEDIUM and HEAVY DUTY. Modern Design and many different types. Direct Drive, Gear Motor, Slow-Speed.

PERMANENT MIXERS
With or without Tanks—Top or Side Entrance—Stirrers of the propeller or turbine type.

DRY BLENDERS, AUTOCLAVES, KETTLES AND DIGESTERS

BRON MIXERS
Belt or Motor Driven

CATALOG
On Mixers, Agitators, Blenders, Ribbon Mixers, etc.
No. 110. Now ready.

CATALOG No. 85
on BALL MILLS—
Either catalog or both sent on request.

INTERNATIONAL ENGINEERING, INC.
Dayton 1, Ohio.

NEW YORK, 15 Park Row • CHICAGO, 407 S. Dearborn
LOS ANGELES 4, 150 N. NORTON AVE.

When inquiring specify CP A5876—see handy form pages 2-3

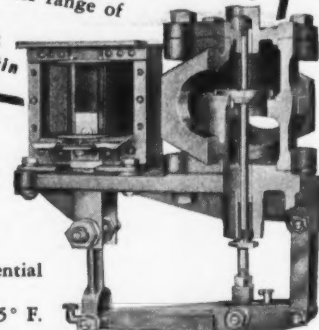
NEW—Direct Acting Solenoid Valve for 150 lbs. Differential Pressure

That's the biggest news about the new Johnson Solenoid Valve. Some sizes will operate under differential pressures up to 150 lbs., *without pilot valves*. All sizes end the time lag and wiredrawing that come with slow opening—the danger of clogging that comes with auxiliary pistons. Whatever your liquid level or flow control problems, investigate the new possibilities this Johnson design brings to solenoid valves. It offers all the basic advantages, with none of the short-comings, for a far greater range of applications.

GET ALL THE FACTS
Write for new bulletin

WHERE CAN YOU USE THIS AUTOMATIC VALVE?

- Immediate full flow
- No pilot valves
- Up to 150 lbs. differential pressure
- Temperature to 365° F.



The Johnson Corporation

826 Wood St., Three Rivers, Mich.

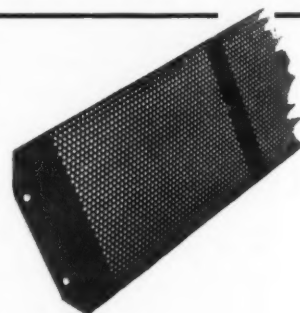
When inquiring specify CP A5877—see handy form pages 2-3

11/64" ROUND TAPERED PERFORATIONS IN 11/64" STAINLESS STEEL PLATE

For the chemical industry, Hendrick makes this special type of perforated plate of 11/64 inch stainless steel, with 11/64 round tapered perforations.

The perforations are reamed individually, and the inside of the perforations, and top and bottom of plates, are polished to insure perfect smoothness. Tolerances of ± 0.003 inches are maintained on perforation size, taper, and thickness of plate.

Write for data on any desired type of perforated or wedge slot screen.



Perforated Metals
Perforated Metal Screens
Architectural Grilles
Mitco Open Steel Flooring
"Shur-Site" Treads and Armorgrids.

HENDRICK
Manufacturing Company
32 DUNDUFF ST., CARBONDALE, PA.
Sales Offices in Principle Cities

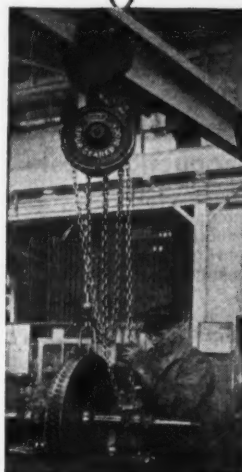
When inquiring specify CP A5878—see handy form pages 2-3



**Safer...Faster...
More Efficient
Production with**

TRADE **YALE** MARK

**SPUR GEARED
CHAIN HOISTS**



Workers can lift heavier loads with less effort—in less time—with Yale Spur Geared Chain Hoists.

Precision engineered, these ball-bearing hoists embody such features as drop-forged steel safety hooks, self-actuating load brakes, hand-welded steel load chains and detachable shackles.

Available in capacities from $\frac{1}{4}$ to 40 tons and in models to suit every industrial need. All hoists are tested to 50% over-load. Write for catalog.

**THE YALE & TOWNE
MANUFACTURING CO.**
4530 Tacony Street
Philadelphia 24, Pa.

When inquiring specify CP A5879—see handy form pages 2-3

PYROFLEX Paint

Resists:—

**acids
alkalis
salts
alcohols
gasolines
oils
fats**

**and most other
corrosives**



Pyroflex Lacquer is a surface coating developed to withstand most corrosive service conditions. It is formulated from the most inert synthetic resins. Upon evaporation of solvents a tough resistant film forms with all the qualities of the resins themselves.

Pyroflex Lacquer is available in black, grey or white—in 1, 5, or 50 gallon containers for immediate shipment. Pyroflex Lacquer Thinner is available for washing brushes, and thinning for use in spray guns.

MAURICE A. KNIGHT
411 Kelly Ave. Akron 9, Ohio

When inquiring specify CP A5880—see handy form pages 2-3

Ideas

of the fog vapor and some drops become heavy, falling to the ground like rain. The operation is repeated continuously and the upward movement is constantly increased by the added momentum. (Summarized from Calcium Chloride Assn. News, Penobscot Bldg., Detroit, Mich.).

Synthetics Bring New Era In Perfume Manufacture

*New chemical aromatic compounds responsible for
creation of new, distinctive perfumes*

One of the most important of the many synthetics developed for the perfume industry has been synthetic musk. It is as powerful as the intrinsic essence of natural musk; can be chemically appraised and is immediately usable. Such an organic chemical, known as "Astrotone" synthetic musk is produced in the laboratories of the Du Pont Company, and is available to perfume manufacturers. Since synthetics have entered the field of perfumery, the discovery of the new chemical aromatic organic compounds has been directly responsible for the creation of new distinctive perfumes. It was, for example, the discovery of aliphatic aldehyde, known as lauric aldehyde, a synthetic which comes from coconut oil, that made possible one of the most famed perfumes of all time. Lauric aldehyde has a powerful high note, so powerful that although it forms the base of a large range of the best perfumes of today, only a few pounds of this substance are used each year.

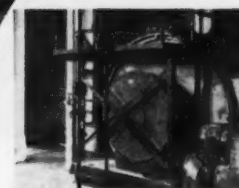
So important are the aliphatic aldehydes, mostly derived from coconut oil, (each a synthetic and representing a different perfume note), that they supply today the distinctive note of the perfumes of the modern French type. Other aliphatic aldehydes suggest the odors of rose, tuberoses, iris, violet, and incense. (Summarized from release of E. I. du Pont de Nemours & Co., (Inc.), Wilmington, Del.)

Valve Manufacturers Striving to Simplify Sizes, Pressure Ratings

*Committee's goal is more economical manufacture,
less variety of automatic regulating valves*

To eliminate excess variety of automatic regulating valves and simplify standardization of pressure ratings and sizes, a standing committee of manufacturers and users now keeps recommendations abreast of current conditions and best practice. Benefits are said to include less capital tied up in slow-moving stocks; more economical manufacture due to simplified inspection requirements, longer runs with fewer changes, less idle equipment, less stock to handle; less seasonal employment; larger units of production and less special machinery; more prompt delivery; less error in shipment; less obsolete material and machinery. Recommendations cover any steel, iron or bronze valve which controls temperature, pressure, level or rate of flow of a fluid, with the exception of certain specialized types. Table 1 in a pamphlet entitled, "Automatic Regulating Valves" lists sizes and primary pressure ratings for steel, iron and bronze bodies for screwed, flanged and union end types. These range from 125 to 1500 psi. (From bulletin No. R219-46, Division of Simplified Practice, National Bureau of Standards, U. S. Dept. of Commerce, Washington, D. C.)

**MONEL BOLTS ARE BEST
...AGAINST SALT CORROSION**



A filter used in Morton Salt Company brine evaporating process. Nickel Alloy drums use Monel Metal bolts and rivets.

OF the destructively corrosive effect of salt and salt brine upon common steel probably no one knows more than the Morton Salt Company... "when it rains it pours."

To reduce maintenance costs in their salt mining and evaporating processes the Morton Company relies upon Monel Metal in contacts with salt and salt brine, using Harper fastenings of the same non-corrosive, non-rusting alloy.

If you have chemical corrosion problems in your industry it will pay you to use Everlasting, non-ferrous fastenings. Consult Harper Engineers or order any of Harper's more than 4850 different types from stock.

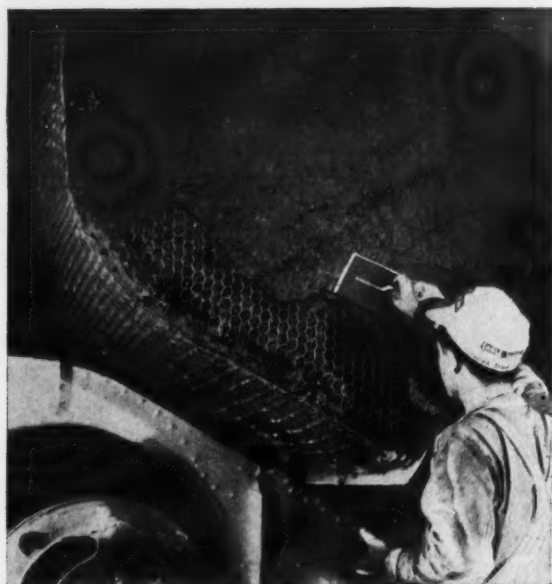
THE H. M. HARPER COMPANY

2644 Fletcher Street, Chicago 18, Illinois

Branch Offices: New York City, Philadelphia, Los Angeles, Milwaukee, Cincinnati, Dallas
Representatives in Principal Cities

HARPER
*Everlasting Fastenings
Chicago*

When inquiring specify CP A5881—see handy form pages 2-3



Users applaud the high Rust-Inhibition of EAGLE SUPER "66" Insulating Cement

Men who have used Eagle Super "66" Insulating Cement are enthusiastic not only about its great fuel-saving ability—they applaud the way Super "66" actually inhibits rust on heated metal equipment! This unique rust-inhibitive quality has been conclusively proved by laboratory tests, and in actual use.



The tremendous insulating efficiency of Super "66" comes from its "Springy Ball" pellets of Eagle Mineral Wool. Each pellet is a maze of dead air cells—one of Nature's most effective barriers against passage of heat. Eagle Super "66" withstands a full range of temperatures up to 1800° F. If not subjected to temperatures above 1200° F., it can be *removed, remixed* and *re-used*! An all-purpose insulation, it can be troweled easily on almost any surface.

Send for data sheets containing
complete technical information.

EAGLE-PICHER INSULATIONS High and Low Temperature

Made by THE EAGLE-PICHER COMPANY, Cincinnati (1), Ohio

Eagle Super "66" Insulating Cement • Eagle L-7 and M-2 Felt • Eagle Supertemp Block • Eagle Blankets • Eagle Pipe Covering • Eagle Insulseal • Eagle Loose Wool • Eagle Insulstic • Eagle Swatchek



When inquiring specify CP A5882—see handy form pages 2-3

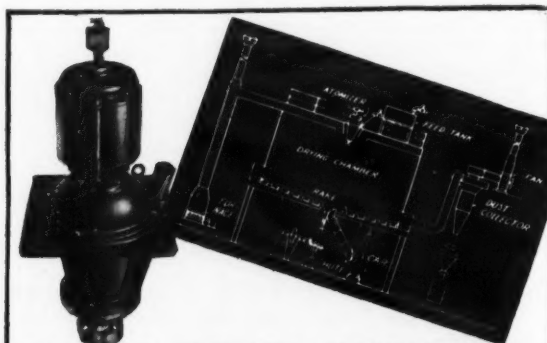
Ideas

Molded Products Partial Answer To Wood Waste Utilization

*Use of resins and curing under proper conditions
produce product with desirable physical properties*

A partial solution of what to do with the existing wood waste is the use of wood-resin combinations in the manufacture of furniture parts, industrial accessories and sheathing board and other building products. Methods have been developed for this field of plastic molding. At the moment it appears that the most important factor in this development is capacity for producing the resin-forming chemicals, a problem which should be met quite readily. It is estimated that in terms of pounds of material, there is readily available at mills of the lumber and woodworking industries, and at low cost, wood waste in the amounts of at least 80% of the salable material produced in these mills. Although a thoroughly sound material having the properties of lumber, except form, this waste has had no extensive use except for fuel. Because of bulk, only limited amounts are used for fuel, even by the woodworking plants. Small amounts of selected types of wood waste are used for wood flour and pulp.

The industry for which this wood waste question holds the most vital interest is the plastics industry. There was a wartime shortage of molding compounds due largely to diversion of resin-forming chemicals to munitions manufacture. Interest developed in the conversion of wood waste into substitute molding compounds, or new types which




LOW COST DRYING with

The "INSTANT DRYING" System.

- Less power and a smaller connected load required.
- Engineered to be trouble free.
- Large capacity, rugged construction.
- Requires a minimum of labor and attention (one man can supervise the operation of a battery of several Instant Drying units per shift).

Many of your industrial colleagues have proved the savings that can be secured through the use of THE INSTANT DRYING SYSTEM. Write to us on your drying problem. We shall answer your questions and send you detailed literature on THE INSTANT DRYING SYSTEM.

INSTANT DRYING CORPORATION

101 Park Avenue,  New York 17

Testing and Research Laboratories at Poughkeepsie, N. Y.
Engineering by CLARK, MacMULLEN & RILEY, INC., New York

When inquiring specify CP A5883—see handy form pages 2-3



NEARLY 25% OF TOTAL PRODUCTION COSTS

are directly attributable to handling functions. In every phase of production from raw materials, through processing and assembling, to final distribution, *handling* is the governor that controls the speed of production. To increase productive output without increasing production costs, take it up with Towmotor.

TAKE IT UP WITH
TOWMOTOR
THE ONE-MAN-GANG

LIFT TRUCKS AND
INDUSTRIAL TRACTORS

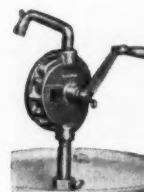
Towmotor Corporation, Div. 7 1226 East 152nd Street
Cleveland 10, Ohio

When inquiring specify CP A5884—see handy form pages 2-3

BLACKMER ROTARY PUMPS

are **COST CUTTERS!**

Both **HAND PUMPS** and
POWER PUMPS are

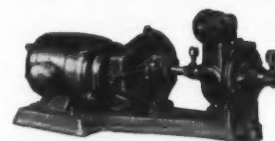


SELF-ADJUSTING FOR WEAR

"Bucket Design" swinging vanes automatically compensate for wear. When the "buckets" finally wear out, a simple replacement job restores the pump to normal capacity.

This means

LOWER PUMPING COSTS



Write for Bulletin
307 "Facts about
Rotary Pumps"

BLACKMER PUMP COMPANY

1840 Century Avenue

Grand Rapids 9, Michigan

POWER PUMPS - HAND PUMPS - EZY-KLEEN STRAINERS -

When inquiring specify CP A5885—see handy form pages 2-3

Ideas

would not require the same amounts of kinds of critical chemicals. Attempts made in this direction have generally been limited in application or too expensive.

The remaining approach to the problem is to attempt to use wood waste in the fabrication of products which have properties similar to that of lumber. The field for application of such materials lies in that class of products which are fabricated from wood at great expense due to forming or milling operations, and in which, plastics, as conventionally known cannot be used to best advantage because of the amount of the material and size of the product.

Products where this wood waste material should have a density of from 20 to 60 pounds per cubic foot, must have reasonable impact, flexural and compressive strength, must be capable of being formed into somewhat difficult shapes and have sufficient chemical resistance for specific applications. It has been found possible to produce molded boards from soft wood shavings at a price which can compete with Plywood or lumber in various instances. It is also possible to extrude resin-sawdust mixtures for the production of rolls and cores. (Summarized from report of address by Robert A. Caughey, Research Dir.-Souhegan Mills, Wilton, N. H. before American Society of Mechanical Engineers.)

★

Retort Tags Show Completion of Cooking by Color Change

Eliminate possibilities of canner's goods reaching shipment in uncooked state



Retort tag in handy container

Canneries are eliminating the possibility of uncooked materials reaching warehouses prepared for shipping by means of a handy retort tag which indicates by color change whether or not cooking has been completed. Tags may be attached to baskets before cooking. A metal container (shown in accompanying illustration) provides a durable holder for the tags. It is reinforced with wire. The tags may be used as an integral part of the processing procedure. The tags are placed on baskets, utilizing the holder already referred to, at the loading machine and the batch number is entered on the tag. When basket reaches the retort, operator adds the retort number. At conclusion of the cook, tag is examined and if green a check mark is placed across the spot. If the tag is still purple or just partially green, the tag is not marked and the basket is detained. Tags may be filed for record. The tags known as "Cook-Chex" tags cost less than one cent each, thus providing protection for each case at a cost of about 1/50 of a cent.

The color change is sudden, complete and visible, from purple to green. The color change takes place after prolonged exposure to moist heat. Dry heat or adverse storage conditions leave the color unchanged.

("Cook-Chex" tags and the novel holders are the product of Aseptic-Thermo Indicator Co., 4665 Hollywood Blvd., Los Angeles, Calif.).

Just a Piece of METAL

...But IT MAY SAVE YOUR LIFE





The rupture diaphragm of the B. S. & B. SAFETY HEAD is the "pressure fuse" which will prevent your pressure vessels from blowing up.

It starts life as a flat blank of almost any metal—Aluminum, copper, silver, stainless steel, platinum and a dozen others are used. Then it is given the spherical form which in great measure accounts for its ability to withstand fatigue in service and to burst at the right pressure in time of need.

Specimen discs are regularly burst to assure consistent performance. The specified bursting pressure of each SAFETY HEAD Diaphragm is the average of bursting pressures of two or more specimen discs from an adjacent section of the same sheet of metal. The bursting pressure of the SAFETY HEAD Diaphragm is marked on a permanently attached metal tab.

A lot of care goes into turning this little piece of metal into a "life preserver" for your life and property. We believe this function deserves the full measure of our fifteen years of research and know-how—and the success of our efforts is proven by the fact that no pressure vessel equipped with a SAFETY HEAD has ever burst from over pressure.

... WRITE FOR CATALOG

BLACK, SIVALLS & BRYSON, Inc.

• SALES OFFICES-- 24th FLOOR POWER AND LIGHT BUILDING, KANSAS CITY 6, MO.

• PLANT-- 7500 EAST 12th STREET, KANSAS CITY 3, MISSOURI



MOVE MATERIALS FASTER AT LOWER COST THE "Weld-Bilt" WAY

Let a WELD-BILT engineer show you ways to speed up your materials handling methods while reducing your operating costs.

PORTABLE ELEVATORS • HYDRAULIC LIFT TRUCKS • 2 & 4 WHEEL TRUCKS • TIERING MACHINES • BARREL TRUCKS & RACKS

Leading American industries use and endorse WELD-BILT equipment. Write for illustrated folder.

The WELD-BILT Heavy-Duty Hydraulic Lift Truck — 6,000 to 10,000 lb. Capacities.



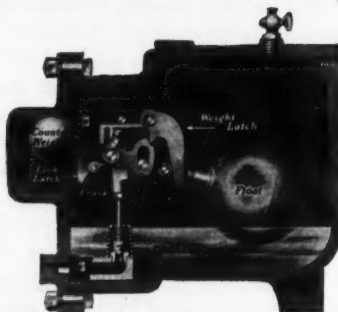
WELD-BILT
Portable Elevator

WEST BEND EQUIPMENT CORP.
226 Water St., West Bend, Wis.
Materials Handling Engineers

When inquiring specify CP A5887 — see handy form pages 2-3

Cut Work on Trap Maintenance

5 reasons
why Nicholson
weight-operated
traps help minimize
trouble



- 1) Leak-Proofed 2 Ways: by positive fluid seal over valve; by weight operation.
- 2) Trouble-Free Simplicity.
- 3) Rugged, to take unavoidable abuse.
- 4) Hardened Stainless Steel—where it counts
- 5) Easily Connected, expediting line work

Traps for Every Purpose — Weight-operated traps for steam, air or gasoline; pressures to 1500 lbs. Piston-operated, thermostatic and expansion steam traps for medium pressures. CATALOG 444.

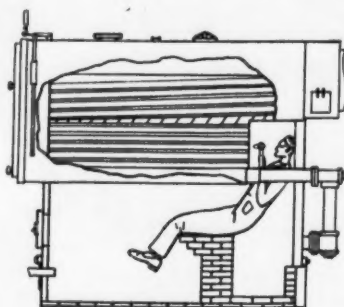
W. H. NICHOLSON & CO.
181 OREGON ST., WILKES-BARRE, PA.
Valves ★ Traps ★ Steam Specialties

When inquiring specify CP A5888 — see handy form pages 2-3

Ideas

Short Cutting, Lever-Type Torch Speeds Fire Tube Boiler Repair

13" oxyacetylene cutting unit eases work in confined space; has 40, 75, 90° bronze head



Application of short cutting torch

To facilitate repair of fire tube boilers, a short cutting, lever-type torch with over-all length of 13 inches is furnished with either a 45, 75 or 90° head of bronze. This oxyacetylene cutting torch is particularly adaptable to removal of worn tubes from the type of heating boilers used in office buildings, schools, large homes and factories where low pressure process steam is required. Although easy access to the front end of such boilers may be gained by opening smoke box doors, space at the rear is often as little as 12 inches deep. Torch has been designed to permit boiler repairman to work efficiently in this confined space. In retubing, skilled repairmen usually wash off the flange, or beading, on the tube, then make three or four gouges on the inner surface. If done carefully, entire wall is cut without damage to the tube sheet and without cutting through

To facilitate repair of fire tube boilers, a short cutting, lever-type torch with over-all length of 13 inches is furnished with either a 45, 75 or 90° head of bronze. This oxyacetylene cutting torch is particularly adaptable to removal of worn tubes from the type of heating boilers used in office

Every LEE KETTLE carries
this CODE CERTIFICATE

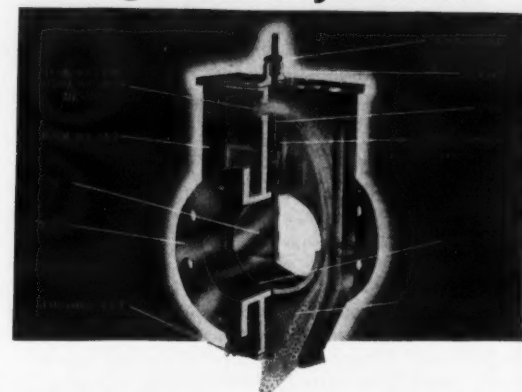


LEE—always headquarters for advanced ideas and improvements in processing equipment proudly announces that ALL Steam Jacketed Kettles are built to A.S.M.E. specifications and the A.S.M.E. Code Certificate is furnished on each kettle—for your greater protection.



When inquiring specify CP A5889 — see handy form pages 2-3

For Dirty Gases or Fluids For Free-Flowing Solids that Clog Ordinary Valves



"KWIKLEEN" SLIDE VALVES

Study this simple valve. Note how solids are forced by the closing blade into sediment chamber, whence the accumulation is removed. High pressure air, steam or water easily blows or flushes out entire valve body. Applicable for pressures to 5 p.s.i. Built of any metal; furnished with any type of control mechanism. Flanged pipe sizes — 4" to 16". Write for Catalog 406-R.

W. S. ROCKWELL CO. • 220 Elliot St.
Fairfield, Connecticut

When inquiring specify CP A5890 — see handy form pages 2-3

ALL-NEOPRENE Latex GLOVES

For Every Industrial Use

- ★ Impermeable to practically all acids and caustics
- ★ Highly resistant to oils and greases



4 POPULAR STYLES

★ No. 5760-5, 18" LONG
EXTRA LONG GAUNTLET
GAUGE .030 TO .040
SIZES 10, 11

★ No. 5737-2, 14" LONG
LONG GAUNTLET
GAUGE .030 TO .040
SIZES 9-10-11-11½-12

★ No. 5705-5, 11" LONG
SHORT GAUNTLET
GAUGE .020 TO .025
SIZES 9-10-11

★ No. 5702-5, 10½" LONG
LIGHT DUTY
GAUGE .010 TO .012
SIZES 7-8-9-10-11

REQUEST SAMPLES
AND PRICES

SEIBERLING LATEX PRODUCTS CO.
AKRON, OHIO

200 - 5th Ave. Bldg., New York Merchandise Mart, Chicago

When inquiring specify CP A5891 — see handy form pages 2-3

WAXES

CARNAUBA

OURICURY

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CRUDE AND REFINED

DOMESTIC
OZOKERITE
AND
CERESINE

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444 MADISON AVENUE • NEW YORK 22

When inquiring specify CP A5892 — see handy form pages 2-3

Triangle
Model
SPA-2
Filler
with 50
conveyor

NOW .. Speed
Automatic Packaging of
Powders and Granules

80 TO 100
PER MINUTE

Here's one of the simplest, fastest, most efficient machines ever built for filling caustics, cleansers, crystals, powders and granules into cans. Automatically feeds, fills, shakes and discharges containers. Equipped with dust hood when necessary. Ask for FILLER BULLETIN.

SPECIFICATIONS
Production — 80 to 100 cans per minute.
Range Built — 1 oz. to 24 oz. (Not range per machine)
Accuracies — 1/16 oz. to 1/4 oz.
Floor Space — 12' x 2 1/2' with std. conveyor.

TRIANGLE PACKAGE MACHINERY CO.

917 NO. SPAULDING AVENUE, CHICAGO

BRANCHES IN PRINCIPAL CITIES

When inquiring specify CP A5893 — see handy form pages 2-3

Ideas

outside of tube, depositing slags. Contraction after cooling then permits drawing tube out through front end of boiler. Further information mailed on request. (Air Reduction Sales Company, 60 E. 42nd St., New York 17, N. Y.)

Two-Way Conveyors do Double Duty Handling Bulk Materials

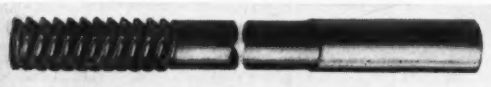
Less equipment, faster production sought by using top cover for return; carries unequal tonnages

Two-way conveyor belts which utilize the top cover of the conveyor for carrying material on the "return run" will aid efficient operation in the steel industry, where ore can be hauled in, and slag taken out, in the same operation. Installation of the belts is done in such a manner to facilitate this feat. The belts made their first public appearance recently when displayed at the Southern Appalachian Mining Convention at Bluefield, W. Va. Features include the ability to carry equal or unequal tonnages, less head room required, no production delay in mines, minimum alignment hazards, no reversing belt problems and less equipment necessary. Said to be world's first two-way conveyor. (The Goodyear Tire & Rubber Company, Akron 16, O.)

Broaches Produce Finished Holes Without Additional Operations

Broach rotates as it cuts; can be reground 10 to 30 times

A recent invention introduces an entirely new technique in producing holes in metal to exceptional accuracy. It is called "rotary broaching" because the tool is, in effect, a broach that rotates as it cuts. The tool is made with high spiral or helical cutting edges, and when end pressure is applied these helical cutting edges remove metal in a true shearing



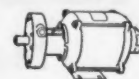
Broach with high spiral cutting edges

manner. These broaches remove metal by molecular cleavage. The chips are unlike those produced by other tools for they resemble steel wool in both form and texture. The cutting edge of the Rotary broach forms a circle, consequently there is no tendency to produce elliptical, bell-mouthed or uneven holes. Savings in production costs are possible because the broaches are hole finishing tools and the necessity of another operation is often eliminated. Life of cutting edge is unusually long and the broaches can be reground ten to thirty times to produce a newly sharpened cutting edge before the diameter is reduced. These tools known as "Shearcutter" Rotary Broaches are being furnished with straight shanks only, in sizes from 1/4" to 1" by one-sixteenth and from 1 1/8" to 1 1/2" by eights. Larger sizes can be supplied on special order. (Fearless Tool Co., 1234 So. Gramercy Place, Los Angeles 6, Cal.)

Eastern

PIONEERED

CLOSE-COUPLED PUMPS



Long ago, our engineers discovered that the key to smooth vibrationless operation and long life was to utilize a common shaft for motor and pump. Even more important, they succeeded in building this better operation into smaller space through these close-coupled designs. This improvement has for years made every Eastern Pump a better pump. Each of more than 300 different models and modifications is the best for the purpose for which it was designed.

The pump illustrated, Model 3J, is a typical example of Eastern pump know-how. It is a three stage heavy duty centrifugal pump designed for pumping moderate quantities of liquids against higher pressures. The open vane impellers in each of the three pump chambers are mounted directly on the motor shaft extension thus making it unnecessary to use internal pump bearings. The pump is sealed by an easily adjustable stuffing box or a mechanical rotary seal with a lapped carbon or bronze face.

SPECIFICATIONS

Type: Centrifugal. Size:

17 1/4" x 8 1/2" x 10 1/4"

Weight: 74 lbs.

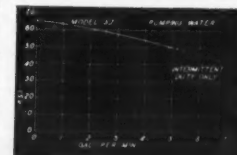
Power: 3/4 H.P. motor.

PERFORMANCE

See chart below



If you have a pumping problem where small space, light weight, and trouble-free operation are factors, write us. We can recommend a model to suit your needs or, if the quantity involved is a reasonable number, we will design a special pump to meet your requirements.



Eastern Engineering Division
EASTERN INDUSTRIES, INC.

49 FOX STREET

NEW HAVEN, CONN.

When inquiring specify CP A5894 — see handy form pages 2-3

**You save
time and work
when you thread
pipe with this**

RIGGID

No. 65R

**Tighten on pipe
with 1 screw**



It stands up handily on its own feet.

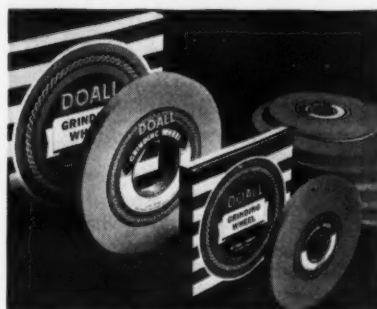
● Threading 1" to 2" pipe is no chore at all with the self-contained quickly adjusted No. 65R threader. Its high-speed steel chasers set to size in 10 seconds — no loose dies to bother with or lose. Workholder sets to pipe size instantly — no bushings, only one screw to tighten on pipe. And you cut smooth perfect threads with the least possible effort. See for yourself why it's so popular — ask for this time and work-saver No. 65R threader at your Supply House.



Ideas

All-Purpose Grinding Wheel Used On All Grinding Machines

Grinds steels, aluminum, bronze, etc.; performs heavier cuts without sacrifice of finish or accuracy



Individually packed all-purpose grinding wheel

had considerable in actual industrial service. It will grind any kind of material, — hardened alloy tool steel, annealed steel, stainless steel, Monel, bronze, aluminum, brass, hard plastics. It works well for both heavy fast roughing cuts and fine finishing. It produces a precision finish comparable to that of a 300 grit wheel.

This all purpose wheel can be used on all types of grinding machines, surface grinders, centerless, cylindrical, tool grinders, pedestal. No alteration to the machine is necessary and the cutting rate is limited only by the ability of the grinding machine. Because of the unique cutting crystals and method of bonding used, heavier cuts without sacrifice of surface finish or accuracy can be taken. Much faster production is easily obtained. The structure is such that loading even grinding soft materials is reduced to a minimum. The bond used in making these wheels is insoluble and prevents them from weakening from use of coolants in wet grinding. On the other hand the open structure is such that work remains cool even when dry grinding. (Doall Co., 1301 Washington Ave., South, Minneapolis, 4, Minn.)

★

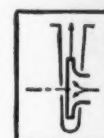
Electronic Stop-Watch Counts Objects At 1,000,000 Per Second

War development now applied to industrial measuring, counting operations

An electronic device developed during the war and used for measuring projectile velocities has been redesigned for peacetime applications and can be used to measure velocities and accelerations for intervals up to 1.0 second in steps of one micro-second, or to count at speeds as high as 1,000,000 per second. Direct results can be read by means of small neon light figures on the front panel of the instrument. When used in conjunction with phototriggering devices, this time interval counter (developed by RCA) makes it possible not only to measure the speed of objects moving at high velocity, but also to produce acceleration curves and other interpretations of mechanical movements occurring in incredibly small fractions of a second. The opening and closing times of circuit breakers and re-



Another
Distinguished
PUMP
"by Aurora"



SIDE SUCTION CENTRIFUGAL

**Capacities to 1400 G.P.M.
Heads to 190 Ft.**

Wherever liquids play an important or incidental part in industrial processing, this Aurora Type GGU serves perfectly and with lasting efficiency. Because the casing is separate from the bearing bracket, the need for special metals to handle corrosives is minimized. Discharge may be placed in any of eight positions. We commend these pumps for high satisfaction and economy.

APCO TURBINE-TYPE PUMPS

For high pressure, small capacity requirements (up to 150 g.p.m.). Wide operating range characteristics. No metal to metal contact. Handles non-lubricating liquids without wear. Only one moving part — the impeller.

AURORA CENTRIFUGALS

for Every
Pumping Job
**HORIZONTAL
SPLIT CASE
Single & Two Stage
SIDE SUCTION
VERTICAL
NON CLOG
SUMP
MIXED FLOW
SPECIAL DESIGN**

**Write for
CONDENSED
CATALOG "M"
or
Consult
SWEETS**



When inquiring specify CP A5896 — see handy form pages 2-3

**Wrestling
loaded
Barrels**



No longer necessary if you equip men with this safe, modern truck.

THOMAS ONE MAN BARREL TRUCK

If your business requires the handling of barrels, you can save time, accidents and a tremendous amount of heavy work with a Thomas One-Man Barrel Truck. Instead of having two or three men wrestle a barrel around, one man can handle up to 1,000 lb. barrels without straining, rocking or lifting. Trucker never touches barrel. Hyatt bearings, rubber tired wheels. Low priced.

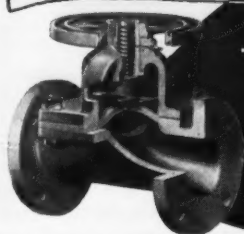


Manufacturers of over 1000 different types of trucks, casters, wheels. Write for catalog. **THOMAS TRUCK & CASTER CO.**, 6757 Mississippi River, Keokuk, Iowa.

When inquiring specify CP A5897 — see handy form pages 2-3

When inquiring specify CP A5895 — see handy form pages 2-3

VALVES for HIGH VACUUM Service



... of 10 microns
or less
... leak rates as
low as .5 liter-
microns per hour.

• Hills-McCanna Diaphragm Valves are available in sizes from 1/4" through 12" to meet the requirements of high vacuum service. Occluded air troubles or air "in leakage" are met by using bodies with homogeneous, impervious linings of glass, rubber, Neoprene, plastic, baked Glyptal or Apiezon "W" wax. Where requirements are not too high unlined bodies of Everdur or a good quality cast iron have been successful. Valve diaphragms of Neoprene, butyl rubber or Hycar give excellent results.

For data on the valves to meet your requirements, write:
HILLS-McCANNNA CO., 2370 North Western Avenue,
Chicago 18, Illinois.

HILLS-McCANNNA
SAUNDERS PATENT

Diaphragm Valves

When inquiring specify CP A5898 — see handy form pages 2-3



**PERISHABLE
TAKE CARE!**

**WARD OFF HAND HAZARDS
with Surety SURESEAL SYNTHETIC
RUBBER GLOVES**

Nature's defenses weren't intended to withstand acids, oils, solvents used in modern industry. Skin protection ... complete, comfortable, and worker-acceptable ... is assured by hard-to-snap, abrasion-resistant Surety Turn-Cuffs. They're made of better synthetic rubber with 14 times service life of natural rubber, other synthetics. Patented design for maximum safety when working in liquids. Turn-Cuff up stops fluids running down arms. Cuff down adds two inches welcome safeguard. ... Get Surety for SAFETY!



Send for your Surety Glove Selector
—takes the guess work out of glove
buying. Do it now!

THE *Surety* RUBBER COMPANY

CARROLLTON • OHIO

When inquiring specify CP A5899 — see handy form pages 2-3

Ideas

lays, as well as impulses from generators, switches and other electrical devices, can also be accurately and rapidly measured or counted. Time intervals longer than 1.0 second can be measured by using an external timer to record the number of times the time interval counter repeats its operation.

Easily adaptable to counting operations, the new instrument is particularly suitable where speed requirements are too fast for the conventional counters and where high speed continuous operations or slippage and wear constitute a major problem. The electronic counter can measure speeds of revolution in rpm without involving any loading effects. It can also be used in such high speed counting applications as the number of items rapidly passing on a continuous conveyor belt, or the number of drops of liquid falling from viscosity testing apparatus. It lends itself easily to pill counting operations. New possibilities in the field of industrial control include use of instruments as an integral unit in selective counting machines, which automatically stop, start or shift operations when a predetermined number of items has been counted. (Radio Corporation of America, RCA-Victor Division, Camden, N. J.)

★

Features of Plastic Clothesline Make It An All Purpose Cordage

*Rayon core, jacketed with Geon resists the elements,
acids and alkalis*



High strength core has non-cracking covering

"Chemclad" is the name of a new plastic clothesline consisting of a high-strength, low stretch rayon core jacketed with Geon (polyvinyl chloride plastic of B. F. Goodrich Co.) and featuring great resistance to age, sun, rain, light, heat and cold. These lines do not crack, even after prolonged exposure to weather and are easily cleaned because no dirt or grime can penetrate the surface. They are mildewproof, do not sag and can be pulled around hooks without cracking. The bright colors provide high visibility and attractive appearance. As the polyvinyl coating is impervious to water, soap, gasoline, oil and many acids and alkalis the line is suited for use as an all-purpose cordage. ("Chemclad" is the product of Carolina Industrial Plastics Corp., Mt. Airy, North Carolina.)

**Only RIGID
guarantees you
a repair-free
housing ...**



**SIZES
6" TO 60"**

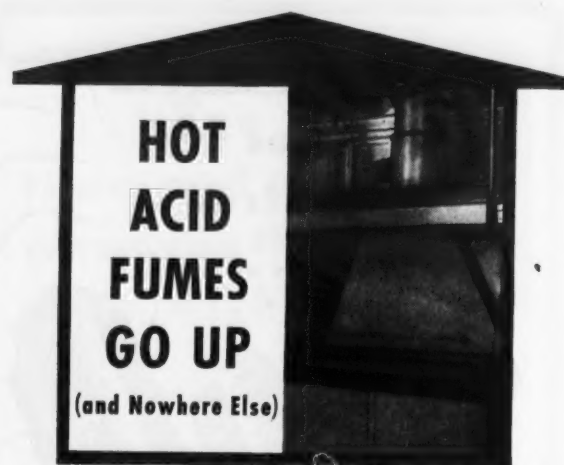
● You get more for your money with RIGID pipe wrenches. That special design housing simply won't warp or break in any normal use, however strenuous — as millions of users know. No laid up for housing repairs, no bother and expense. No binding of adjusting nut — it spins easily to size. Alloy jaws take hold and let go instantly. Handy pipe scale on hookjaw, comfort-grip I-beam handle. A wrench it's a pleasure to work with — ask your Supply House.

**RIGID Compound Leverage
Wrench.**

RIGID

WORK-SAVER PIPE TOOLS
THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U. S. A.

When inquiring specify CP A5900 — see handy form pages 2-3



DRUM-TYPE STACK FAN DOES THE TRICK

Pressed and Welded Steel Products Company, Inc., Long Island City, N. Y., had a production *bottleneck*.

Passivating—applying hot nitric acid solution to remove particles of the carbon steel tools and dies which adhered to finished stainless steel parts—was not keeping up with demand.

So injurious are these hot acid fumes to men, machines, and materials, that the work was done *outside* in the open air. Yet, even so, the job was a hazard to health, and weather made production uncertain.

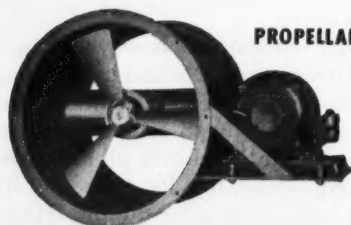
EFFICIENT AIR MOVEMENT

Obviously, an inside location would be better. But that meant disposing of fumes. What fan could be depended upon to remove them *completely*, and stand up under acid attack?

They found the answer. So a tank was built. And a Propellair drum-type fan was installed in the stack leading through the roof.

That did it. Production *jumped*. "A great thing," says workman Anthony Lobasso. "Now all we need is gloves." Maintenance is nil.

Propellair double-action "*pull-push*" fans really do move air. And they're simple, compact, easy to install. Write today for complete information on the many types and sizes.



PROPELLAIR DRUM-TYPE FANS

Complete, convenient, self-contained units ready to install in ducts or stacks from 20 to 48 inches diameter. Fan is mounted on heavy cross-tube which also protects drive belt. Capacities to 43,000 c.f.m.



When inquiring specify CP A5901 — see handy form pages 2-3

Page 66
When inquiring specify CP A5902 — see handy form pages 2-3



NEW LITERATURE ★

The following literature has been issued recently by manufacturers of the products discussed and is available to chemical process manufacturing executives on request. Address requests to the publishers by using handy request form, pages 2-3, or write to the manufacturers direct.

Six Fundamental Steps of Water Treating Service

Nearly all water used industrially must have some kind of treatment to keep it from forming scale and corroding the boilers in which it is used. A booklet describes the service one company in the water treating business offers. The service that the company sells consists in the main of six steps of endeavor to bring about satisfactory operating conditions within industry with respect to their water needs. The first step is a complete plant investigation and report on the conditions that exist. Information on boiler practice and specifications is completely reported. The second step is that of establishing proper plant control. Good boiler water conditioning requires far more than the mere addition of certain fixed amounts of chemicals to the water. An outlined treatment is indicated. The third step consists of daily plant control tests. These are kept in chart form and the results recorded so that they may be reviewed by a central laboratory maintained by the service company. Any deficiencies that are revealed by this plant record as analyzed by service company chemists are brought to attention of the customer's management. The fourth step is one recommendation in which treatment is prescribed for the correction or the prevention of a condition. Step number five is a check analyses on samples sent in from the customer's plant. And the last feature of the service consists of frequent visits by the service company's engineers to the plant by which personal discussion and evaluations can be made of any water problem that may arise. After such a visit field recommendations are sent to the head office of the customer and if properly carried out should result in satisfactory water conditions being experienced in the plant. Literature on this subject is sent on application.

W. H. & L. D. BETZ, Dept. CP, Gillingham & Worth Sts., Philadelphia 24, Pa.

When inquiring specify CP A5902 — see handy form pages 2-3

★

Magnesium Anodes Check Undersea, Underground Corrosion

Subject. Use of magnesium anodes to control underground and underwater corrosion. 14-page pamphlet describes corrosion as primarily an electrochemical process caused by reaction between metal surfaces and chemicals present in earth and water. Installation of expendable magnesium anodes, connected to the structure-to-be-protected by means of insulated copper lead wire, and buried in a prepared chemical environment in the surrounding soil or water, makes the entire structure the cathode of an electrolytic cell, or "battery." Anodes are thus consumed to save vital structures from corrosion. Magnesium was selected as being the most effective of all metals for this purpose because of its low electrochemical equivalent, high driving voltage and freedom from polarization. These characteristics enable it to supply current freely and continuously to overcome electrochemical corrosion process in buried structures and metals in contact with water. Anodes are described as available in two compositions: a high purity alloy and a commercially pure magnesium. Relative merits of these compositions are described, and directions given for their selection. Similar treatment is given the various

sizes and weights of anodes. These are listed in tabular form. Ample space is devoted to amounts of current needed, number of anodes required, their location in relation to the structure, installation and cost. Description of the chemical mud or "backfill" in which anodes are buried lists two backfill compositions, one for high and one for low soil resistivity. Complete with diagrams and charts, this literature will be furnished on request.

MAGNESIUM DIVISION, DOW CHEMICAL COMPANY, Dept. CP, Midland, Mich.

When inquiring specify CP A5903 — see handy form pages 2-3

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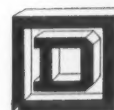
Split Flanged Pipe and Fittings Resist Most Acids

Process operators and engineers handling corrosives will be interested in acid-resistant split flanged pipe and fittings, described in four-page booklet. Manufactured in two compositions: Duriron and Durichlor. Duriron, a high-silicon iron alloy containing about 14.5 silicon, is highly resistant to all commonly used acids except hydrofluoric, fuming sulfuric and sulfurous. Also available in



SQUARE D OFFERS

a wide range of automatic controls for practically all sizes of water pumps, condensate pumps, vacuum pumps, and air compressors. Send for your free copy of Bulletin 550, with illustrations and specifications. Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin.



SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

When inquiring specify CP A5904 — see handy form pages 2-3

CHEMICAL PREVIEW

New Literature

castings. Durichlor is similar to Duriron in resistance, but is superior for chloride solutions. It was developed to resist hydrochloric acid in all concentrations and at all temperatures below boiling. Malleable iron flanges (125 lb. American Standard Drilling), are split for ease of insulation and consist of two interlocking halves. May be rotated, permitting any bolting alignment. Also available in nickel-chrome-moly alloy. Pipe diameters range from 1" to 8" I.D. Larger diameters made to order. Standard lengths shown on page two. Other charts cover electrical insulation, sizes of draw-off elbows, split flanged pipe fittings, hose connections and couplings, reducers, expansion joints, laterals and adapters. Figure 1 illustrates pipe joint assembly. Instructions concerning installation and misapplication are given. Manufacturer claims to be largest devoted exclusively to producing corrosion-resistant alloys and equipment. Bulletin No. 704 mailed on request. Respective physical and chemical characteristics of Duriron and Durichlor described in Bulletins No. 11 and 50.

THE DURIRON COMPANY, Inc., Dept. CP, Dayton 1, O.

When inquiring specify CP A5905 — see handy form pages 2-3

Engineering Data Book is Storehouse of Information

Users of electrical supplies, electrical roughing-in materials, will find a wealth of information in the 350-page Engineering Data Book. Profusely illustrated and well catalogued, text covers conduit, industrial busways, surface raceways, "plug-in" strip, armored cable, flexible tubing, gorilla grips, brackets and wireholders, fuses, wire and cable. Almost 30 pages devoted to data section, which includes electric wire and cable terminology, electrical symbols for architectural plans, dimensions and weights of annealed copper wire and standard concentrically stranded annealed copper cable, alternating and direct current formulas, function of numbers, American Standard dimensions of wood screws, nails, and similar information. General index covers an alphabetical, engineering, numerical and wire index. Pages tabbed for quick reference. Copies mailed on request.

NATIONAL ELECTRIC PRODUCTS CORPORATION, Dept. CP, Pittsburgh 22, Pa.

When inquiring specify CP A5906 — see handy form pages 2-3

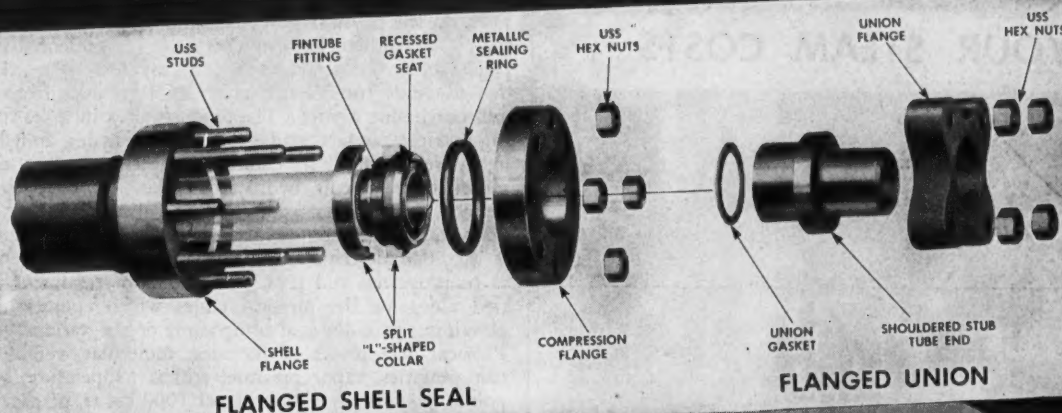
Pocket Guide Is Time Study of Metal Fabricating Short Cuts

The technique of contour machining and its application in metal working shops is demonstrated in a 22-page booklet designed for shopcoat pocket or tool chest. A pictorial time study of metal fabrication short cuts. Graphic comparisons show how the productivity and life of more costly machine tools can be increased by relieving them of "hogging" operations that are performed more economically on the company's contour sawing machines, shapers, lathes, milling machines and similar equipment. Versatility and material economy is pictured on ten basic jobs requiring internal, external, three dimensional, radius, circular cutting and finishing operations. Diagrams, pictures and text give visual, composite story on each page. Set-up time is emphasized with each operation and dimensional data given. Literature mailed on request.

THE DOALL COMPANY, Dept. CP, 1301 Washington Ave. S., Minneapolis 4, Minn.

When inquiring specify CP A5907 — see handy form pages 2-3

THIS EFFICIENT HEAD END ASSEMBLY



featured exclusively in BROWN FINTUBE Sectional Heat Exchangers

DEVELOPMENT of this flanged head end and its adaption to sectional hairpin heat exchangers — another achievement of Brown Fintube engineers — enables users to avoid packed joints, glands, ground joint seals, screw unions, and all the operating and maintenance troubles resulting from ground joint and screw union construction.

With this construction, the seating surfaces of the shell flange and fintube fitting are in full view. They can be wiped clean of all grit and dirt before closing the seal, — not possible with inside ground joint construction. The soft metal ring overcomes any slight unevenness of the seating surfaces, and permits tight, leak-proof closures to be made time after time.

Enthusiastically endorsed by operating and maintenance departments of oil refineries and chemical processing plants, this ring joint seal is but one of the many exclusive features only Brown Fintube Sectional Heat Exchangers can give you. Brown's exclusive "one-piece" fintubes whose high heat transfer efficiency is maintained undiminished during the entire life of the tube, — our exclusive non-removable rear end construction, and replaceable stud bolting throughout are some of the others.

Send today for the fully descriptive catalog, and let our engineers help you in adapting Brown Fintube Sectional Heat Exchangers to your exact and individual requirements.

THE BROWN FINTUBE COMPANY

119 HURON STREET • ELYRIA, OHIO

MANUFACTURERS OF BROWN RESISTANCE WELDED INTEGRALLY BONDED ONE-PIECE FINTUBES, AND FINTUBE HEAT TRANSFER PRODUCTS

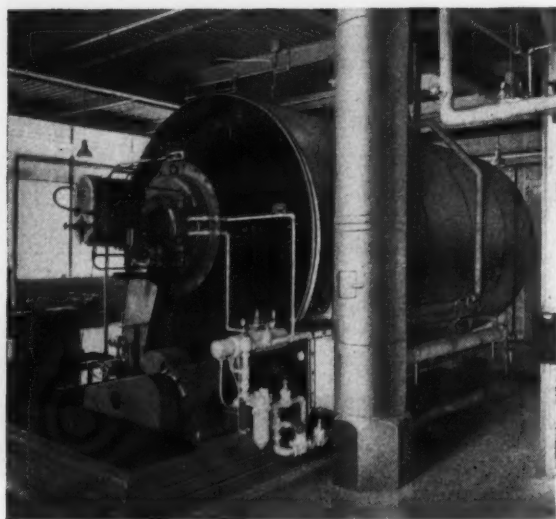


Send for
Bulletin
No. 452

When inquiring specify CP A5908 . . . see information request blank, pgs. 2-3



PLAN NOW TO CUT YOUR STEAM COSTS . .



Gain a Clean, Efficient Boiler Room . . . Lower Steam Costs . . . with a
Cleaver-Brooks Steam Generator . . . Planned for Your Needs

LOWER STEAM GENERATING COSTS Lead to Lower Production Costs. . .

CLEAVER-BROOKS Steam Generators are "tailored" for their job. They are installed to meet an individual plant's needs; Cleaver-Brooks puts unit into initial operation, instructs as to operation, care, and maintenance.

No recommendations are made until sufficient facts and figures have been compiled and a careful analysis completed of your steam requirements on the basis of today's load and tomorrow's anticipated need.

With this information, the most economically sized steam generator and related equipment to handle the load is then determined.

Application engineering, plus basically sound design and construction means that the maximum of value is provided from the day your Cleaver-Brooks Steam Generator is installed.



CLEAVER-BROOKS COMPANY

343 E. Keefe Avenue
Milwaukee 12, Wisconsin

WRITE on your Business Letterhead
for the Free Steam Cost-Calculator
— a ready-reference slide rule showing
the comparative steam costs when
using oil or coal as fuel.

Cleaver-Brooks STEAM GENERATORS

When inquiring specify CP A5909 — see handy form pages 2-3

New Literature

Tabular Guide Lists Properties of 175 Synthetic Organic Chemicals

Data on the physical properties and applications for more than 175 synthetic organic chemicals are presented in 12-page tabular form for ready and easy reference. A condensed guide for research chemists, laboratory technicians and purchasing agents. The product index includes following entries: acetals, acids, alcohols, aldehydes, anhydrides, hydroxyethyl cellulose, chlorine compounds, esters, ethers, glycol-ethers, glycols, hydrocarbons, ketones, nitrogen compounds, plasticizers, polyethylene glycols, sulfur compounds, and wetting agents. Each group of compounds is accorded descriptive treatment and discussed generally as to properties and uses. This form of treatment is carried alongside the physical tables which enumerate data pertaining to individual compounds of the various groups. Physical data presented includes: molecular weights, specific gravities, vapor pressure, critical temperature, boiling points, pounds per gallon or per 1000 cu. ft. of gas, freezing points, flash points, solubility and viscosity. Write for Form 6136.

CARBIDE AND CARBON CHEMICALS CORPORATION, Dept.
CP, 30 E. 42nd St., New York 17, N. Y.

When inquiring specify CP A5910 — see handy form pages 2-3

★

16-page Catalog Is Buying Guide To Motor and Other Basic Machinery

"Basic Machinery for the Processing Industries" is the title of a condensed 16-page catalog and buying guide designed to aid readers in making preliminary selection of motors, motor controls, power generation and distribution equipment, vibrating screens, feeders, washing equipment, pumps, crushers, grinding and roller mills, pyro-processing machinery, blowers and compressors, V-belt drives, electronic heating and welding equipment. Some 19 bulletins are abstracted, with salient features outlined below the article describing a particular piece of equipment. Along the side of each page is carried general information on the operations for which the equipment described was designed. Dimensional charts occupy space at the bottom of pages under the articles to which they pertain. Catalog Nos. are given. "Basic Machinery For The Processing Industries" may be obtained by writing the manufacturer.

ALLIS-CHALMERS, Dept. CP, Milwaukee, Wis.

When inquiring specify CP A5911 — see handy form pages 2-3

★

Brass Lube Oil and Jacket Water Coolers are Light and Offer New Construction Features

A 4 page bulletin describes lube oil and jacket water coolers. They are designed for smaller sizes of diesel and gas engines, reduction gears, thrust bearings, turbines, hydraulic presses, and other like applications. Dimension charts and diagrams tell the story of the features offered. Two types of coolers are pictured, multi-pass and single pass flow through tube designs. For most conditions the multi-pass unit is desirable because for a given quantity of cooling water there is a higher water velocity through the tubes. This in turn increases the rate of heat transfer and keeps the cooling requirements to a minimum. For those conditions where piping can be simplified and where large quantities of cooling water are to be passed through the tubes the single pass unit is best suited. With the large size connections and ample flow areas it is possible to pass high rates of water with very little loss in pressure head. Addi-



Hydrovactor Method of Materials Handling

Converging water jets create vacuum in the pipe line to the portable feeding tool, thus there are no moving parts to wear. All you need is a pump to supply water at the correct pressure and the chances are that you have one you can use. Feeding tool operates on Windswept Principle, which prevents overloading or clogging. Material is handled dry and may be discharged to nearby or distant lowlands or fill or it may be collected either wet or dry, with water recirculated if desired. System now used by many of the Nation's leading industrial plants and power stations. Send for Bulletin 744.

The Allen-Sherman-Hoff Co., 1433 Locust Street, Phila. 2, Pa.

Representatives in Most Principal Cities.

When inquiring specify CP A5912 — see handy form pages 2-3

Send for this helpful new booklet!

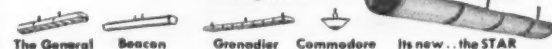
You'll find it a big
aid in planning
**OFFICE
LIGHTING**



Here's a completely different way to look at office lighting—and to measure it in terms of results. You'll find this booklet helpful, easy-to-follow and practical. Tells you how Wakefield's new Over-ALL lighting can speed work, increase comfort, reduce errors, minimize eyestrain. Send for your copy today. The F. W. Wakefield Brass Company, Vermilion, Ohio.

Wakefield

Lighting Equipment for Office and
Drafting Room



When inquiring specify CP A5913 — see handy form pages 2-3

New Literature

tional savings can be effected by the elimination of by-pass piping and valves on an installation such as a diesel engine lube oil cooler where it is desirable to pass all of the jacket water through the tubes of the oil cooler. Corrosion eliminators are offered in the form of replaceable zinc rods. A request will bring bulletin 4922.

ROSS HEATER AND MANUFACTURING COMPANY, INC., Dept. CP, 1407 West Ave., Buffalo 13, N. Y.

When inquiring specify CP A5914 — see handy form pages 2-3

★

"Modern Organic Finishes" Offers New Methods and Materials

"Modern Organic Finishes—Their Application to Industrial Products" (Rollin H. Wampler, Technical Director, Southern Varnish Corporation), offers composite picture of modern (1946) industrial finishing operations. A book of methods, stressing selection and use of materials and equipment for best finish at least cost. For industrial users of organic protective and decorative coatings. Valuable reference material for industrial chemists, finishing superintendents, technicians, production executives, purchasing agents. Organic finishing materials, application and drying methods, finishing processes and finishing department conveyor methods described and illustrated. Section VI, "General Considerations," discusses good practice in the finishing department and the testing and evaluating of finishes. Materials covered include oleoresinous and alkyd varnishes and enamels; cellulose lacquers, spirit varnishes, high integrity and specialty finishes; stains, wood and metal fillers, miscellaneous finishing materials. Chapter 17 deals with finishing plastics and resin-impregnated wood. Remit \$8.50 to publisher, name and address below. Inquiries may be indicated on request slip.

CHEMICAL PUBLISHING CO., Dept. CP, 26 Court St., Brooklyn, N. Y.

When inquiring specify CP A5915 — see handy form pages 2-3

★

Two-Stage Centrifugal Pumps Have Many Industrial Uses

Two-stage centrifugal pumps are described in a 16-page booklet. Profusely illustrated. Wide application in chemical plants, paper mills, breweries, refineries, canneries, packing plants and steel mills. Useful on dewatering service and as station pumps in coal and metal mines, condensate service in power plants, stabilizers and reflux pumps in refineries, jetting pumps for pile driving, hydraulic pumps on elevator service. Cross-sectional diagrams point out advantages of deep stuffing boxes, large shafts, keyed shaft sleeves, long-lived channel rings, angular-contact ball bearings, carefully designed liquid passages, single-suction closed-type impellers and renewable wearing rings, short feet cast pump support and horizontally-split casing. Illustrations show tandem, turbine, gasoline, electrical, V-belt and dual turbine and motor driven pumps. Performance is highlighted by charts showing approximate dimensions and total head in feet of water for 60 and 50 cycle pumps. Photographs of 16 installations, including oil refineries, iron mines and steel plants. Remaining pages devoted to a typical pumping problem and pipe friction. Write for bulletin.

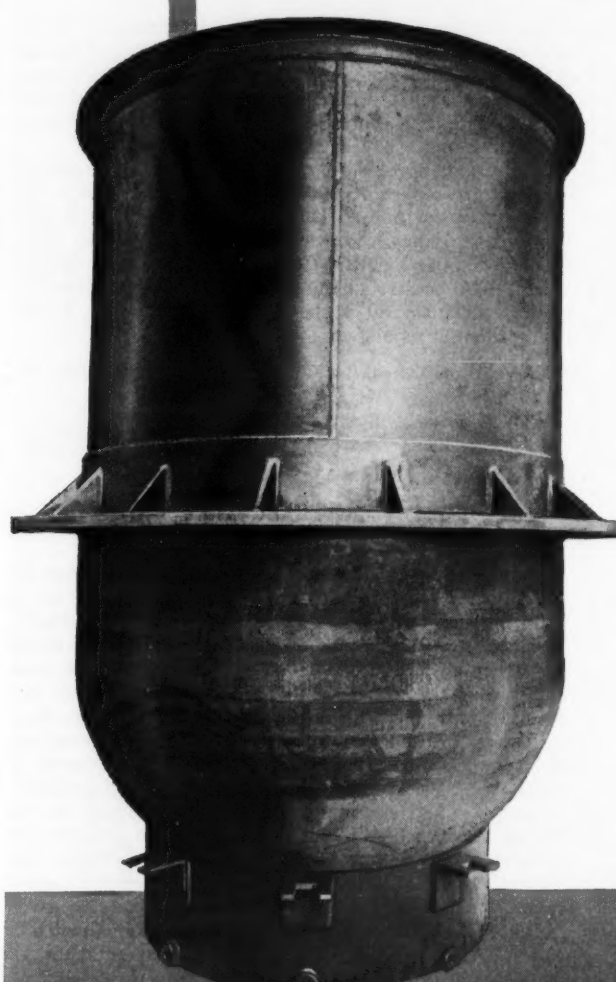
INGERSOLL-RAND, Dept. CP, 11 Broadway, New York 4, N. Y.

When inquiring specify CP A5916 — see handy form pages 2-3

Another

EDGE MOOR ACHIEVEMENT

IN PROCESS EQUIPMENT FABRICATION



This hemispherical bottom varnish kettle, five feet in diameter, ten feet high with a one-inch thick bottom is *another* EDGE MOOR achievement in process equipment fabrication . . . a direct result of EDGE MOOR experience, facilities and proficiency.

EDGE MOOR is equipped to furnish *any* type of heavy-wall welded fabrication to your individual designs, specifications or requirements . . . in metal thicknesses up to 2½". Materials include:

CARBON STEELS	MONEL	INCONEL
STAINLESS STEELS	HERCULOY	NICHROME
CLAD STEELS	HIGH CHROME	EVERDUR
NICKEL STEELS	18-8 ALLOYS	NICKEL

EDGE MOOR Shops have complete facilities for stress-relieving, annealing and X-ray . . . and are approved by leading insurance companies for fusion welding to meet all codes and tests. We shall be pleased to place our experience and facilities at your disposal when you are considering additional plant equipment.

EDGE MOOR IRON WORKS, INC. • Main Office and Works: Edge Moor, Del. Branch Offices and Agents: 95 River Street, Hoboken, New Jersey • 7 Water Street, Boston, Massachusetts • P. O. Box 9, Station E, Atlanta, Georgia • 2459 Woodward Avenue, Detroit, Michigan • One N. LaSalle Street, Chicago, Illinois • 2295 University Avenue, Saint Paul, Minnesota • 623 Aztec Building, San Antonio 5, Texas • 141 Second Street, San Francisco, Calif.

edge moor fabricators of process equipment



When inquiring specify CP A5917 . . . see information request blank, pgs. 2-3

when you buy **STAINLESS STEEL**
PROCESSING EQUIPMENT
*Get All the advantages
the alloy offers*

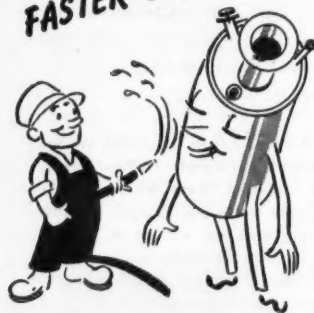
LONGER SERVICE



**LOWER
MAINTENANCE
COST**



FASTER CLEANING



**MAXIMUM
CORROSION
RESISTANCE**



It takes a specialist to transform stainless steel sheet into processing equipment that gives you the best out of the alloy. We work with stainless steel alloys exclusively. That means we're equipped to protect your investment in stainless steel processing equipment—know all the fabricating safeguards that give you the maximum benefits of the original alloy in your finished vessel. Consult with us on your requirements.

S. BLICKMAN, INC. • 711 GREGORY AVE. • WEEHAWKEN, N. J.

S. BLICKMAN, INC.
Guards Alloys in Fabrication

SEND FOR THIS
VALUABLE BOOK
A request on your letter-
head will bring our
guide, "What to Look
for When You Specify
Stainless Steel for Your
Processing Equipment."



CORROSION RESISTANT PROCESSING EQUIPMENT



When inquiring specify CP A5918 — see handy form pages 2-3

New Literature

Water Soluble Castor Oil Jelly and Concentrates; Gasket Seals Give Prolonged Service

Konag Water Soluble Castor Oil Jelly for better cutting edge lubrication on automatic screw machines and high speed operations using soft metals and shallow cuts is theme of literature offered by manufacturer. Other literature covers Konag Water Soluble Castor Oil Concentrate Cutting Oil Additive and Konag Castor Gasket Seal. All three products produced by Paluszek Process which removes gum-forming matter and other substances found in raw castor oil but retains superior oiliness desirable in cutting operations.

Konag Jelly is usually diluted in ratios from one part Konag Jelly to 20 or more parts water, depending on preference of individual operator. On many machines a ratio of one to 40 is successfully used, as Konag Jelly can be dissolved in 40 times its volume and solution will still possess satisfactory lubricating power. A non-corrosive, sudsless, scumfree, colorless coolant.

Water Soluble Castor Oil Concentrate Cutting Oil Additive contains minium natural colloidal graphite broken down to 1/20 of micron in particle size and pure water soluble castor oil concentrate. Improves cutting oil when blended, prolongs cutting life, smooth, fast. For water soluble oils only, one-half pint per five gallons.

Castor Gasket Seals are chemically inert, acid-resistant. Temperature range: 50-600 degrees F. Same gasket may be reused many times. Does not dry out, crack or turn brittle, text claims. Prevents leaks by steam, gas, acids, gasoline, similar liquids. Contracts, expands with temperature. Also preserves felt, cork, paper gaskets, grease retainers, packings and washers. Many auto uses. Literature mailed on request.

NATIONAL GRAPHITE CO., Inc., Dept. CP, 17 John St., New York, N. Y.

When inquiring specify CP A5919 — see handy form pages 2-3

★

Tank Rheostats Provide Control for Electroplating Operations

Tank rheostats are covered in a booklet that contains pictures and drawings. Ampere capacity is from 15 to 5000 amperes. Rheostats in all ratings are available as standard in voltage drops up to 6 volts. Higher voltage drop rheostats are available on request. The most commonly used rheostat is the 3 volt drop unit, but this fact does not mean that this is the recommended voltage drop for the majority of plating tank applications. To compute the correct voltage drop, simply subtract the required plating tank voltage from the line voltage that is available. A tapered type rheostat provides a variable voltage on the plating tank, such as required for chromium plating. The rheostat is designed to give a higher voltage drop at low current values and a lower drop at greater current values. Any practical value of voltage drop at a given current value can be furnished. Each cam type switch is plainly marked to indicate the normal ampere rating of the step which it controls. Intermittent overloads of 25% or momentary overloads of 50% are withstood. When specified, a short-circuiting switch can be provided. This contact short-circuits the entire rheostat and permits the full bus voltage to be applied to the tank. Both voltmeter and ammeter are substantially built to operate with precision under the severest conditions. Rated at 50 millivolts, they are available in ratings up to 12,000 amperes. Electroplating and anodizing motor generator sets are

We Have IT



● The important story of this radically simpler, more economical device for the continuous removal of condensate, air and non-condensable gases from steam lines.

This advanced steam trap, with no moving parts is free of valves, bellows and floats.

The Coe Drainator Bulletin No. 903-B will prove of interest and value to you whether your trap problems concern paper machinery, water heaters, heating systems, process dryers, cookers, distilling equipment or laundry and dry cleaning equipment, etc.

Write for Bulletin 903-B

The COE MANUFACTURING CO.
503 BANK STREET • PAINESVILLE, OHIO

DRAINATOR • THE ADVANCED STEAM TRAP

When inquiring specify CP A5920 — see handy form pages 2-3

How does **INGACLAD** fit into *your* picture?

Look around your plant... at your products... at your equipment. Wherever stainless steel protection is needed only on the exposed or contact side, there is where IngAcad Stainless-Clad Steel fits into your picture. Because IngAcad is 20% solid stainless steel, permanently bonded to a backing of mild steel, it provides all the stainless steel protection you need—for far less than the cost of solid stainless. Doesn't that fit into your picture?



INGACLAD
STAINLESS-CLAD STEEL

INGERSOLL Steel Division • BORG-WARNER CORPORATION • 310 S. Michigan Ave., CHICAGO 4, ILLINOIS
PLANTS: Chicago, Illinois • New Castle, Indiana • Kalamazoo, Michigan

When inquiring specify CP A5921 — see handy form pages 2-3

New Literature

pictured in concluding the booklet which may be had on request.

COLUMBIA ELECTRIC MANUFACTURING CO., Dept. CP,
4519 Hamilton Ave., N. E. Cleveland 14, Ohio.

When inquiring specify CP A5922 — see handy form pages 2-3

★

Text Tells When, Where, Why of Steam Trapping and Air Venting

"Steam Trapping and Air Venting" (L. G. Northcroft) explains graphically the importance and efficiencies of correct steam trapping and air venting in concise *how, when, where* and *why* language. A pocket-sized reference and guide for managers and owners of steam-heated plants, engineers and students of engineering. 216 charts and diagrammatic explanations of text. Correct, up-to-date (1946) coordination of condensate drainage with adequate air venting for heating and process purposes is described with emphasis on steam economy and output efficiency. Text tells characteristics of steam and condensates; advantages, disadvantages and costs of various steam trap types; installation; and discusses air in steam spaces; low potential heating; heating, kitchen and hospital equipment; pans and evaporators; dryers; process treatment by steam; ship installations; steam mains, power plant and compressed air. Appendices cover correct sizing of steam and condensate return pipes, condensation rates and steam tables. Remittance of \$4.50 should be made direct to publisher (name and address below). Request for additional information, however, should be indicated on request slip.

CHEMICAL PUBLISHING CO., Dept. CP, 26 Court St., Brooklyn, N. Y.

When inquiring specify CP A5923 — see handy form pages 2-3

★

Equipment Catalog Offers Mixers, Blenders, Kettles And Pumps

A 32 page catalog lists equipment for the process industry. Portable and side entering mixers are described as are wood tanks and various other types of mixers. The blenders offered have an anti-balling feature for materials having a tendency to "ball-up", or collect in concentrations. This device breaks up lumps, prevents "agglomeration", or lumping, and forces thorough distribution of all component materials. Laboratory jar mills have up to 15 gallon capacities in a choice of metals. Kettles and pressure vessels are offered, some up to 3000 gallon capacities. Among the process equipment units covered are: autoclaves, dryers, fractionating columns, jacketed fittings, fumigators, heat exchangers, impregnators, kettles, pressure vessels, tanks, vulcanizers, and special equipment. A large number of pumps are illustrated. They are of the screw, rotex, centrifugal and chemical types. Centrifugal pumps are available up to 3600 GPM., heads to 400 ft. and temperatures to 350° F. The catalog concludes with a line of industrial locomotives for general industrial use. Of interest is a fireless locomotive that has a steam reservoir instead of the conventional water tank and fire box. It receives its steam supply from the plant boiler. Diesel equipment is also included in this catalog which will be promptly sent on request.

H. K. PORTER COMPANY, Dept. CP, Pittsburgh 22, Pa.

When inquiring specify CP A5924 — see handy form pages 2-3

NOVEMBER-DECEMBER 1946

Announcing!

AUTOCLAVE ENGINEERS, INC.



HIGH PRESSURE AUTOCLAVES

Standard models from one quart to five gallon capacity with working pressures up to 15,000 psi, temperatures up to 750° F. Constructed of Stainless Steel or other metals, and equipped with water cooled stuffing boxes, accurately machined, precision ball thrust bearings; Agitator shaft ground, polished and hardened. With or without heating jackets. Other types and sizes to order.

HIGH PRESSURE REACTORS

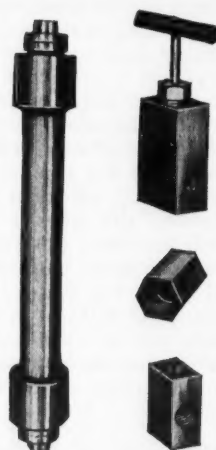
Constructed of Stainless Steel or other metals... available in the following standard capacities—or capacities to suit your needs:

1/2 liter 1 liter 4 liters 8 liters
2 liter 2 liters 6 liters 10 liters

Working pressures up to 15,000 pounds per square inch, and working temperatures up to 1,000° F. Larger sizes and higher pressures built to order.

COMPLETE LINE OF HIGH PRESSURE STAINLESS STEEL VALVES AND FITTINGS

Bodies are constructed of 18-8 Stainless Steel for working pressures up to 25,000 pounds per square inch. Valve stems are of chrome Stainless Steel heat treated with ground threads and self sealing packing ring. Handles are steel finished in black ebony. Precision construction gives finger tip operation.



● PRECISION SCIENTIFIC CO., of Chicago, Illinois, and AUTOCLAVE ENGINEERS, of Titusville, Pennsylvania, announces the formation of a subsidiary corporation —

AUTOCLAVE ENGINEERS, INC.

— for the design, manufacture and distribution of laboratory and pilot plant high pressure equipment. There will be available a complete line of high pressure valves, fittings, pumps, autoclaves, and reactors—working pressures up to 25,000 lbs., working temperatures up to 1000° F — of Stainless Steel and other materials.

★

Mr. Fred Gasche, formerly of Blaw-Knox Company, Struthers-Wells, and Autoclave Engineers, will be actively in charge.

★

Write for complete descriptive bulletin No.

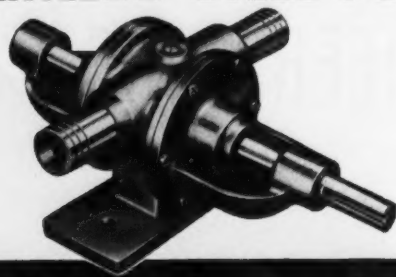
AUTOCLAVE ENGINEERS, INC.

3737 CORTLAND ST.

CHICAGO 47, ILLINOIS

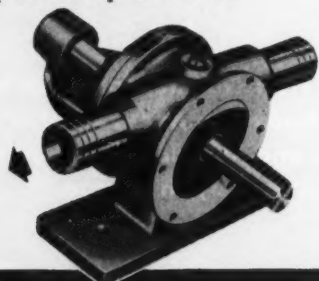
When inquiring specify CP A5925 . . . see information request blank, pgs. 2-3

ANNOUNCING THE NEW JABSCO STAINLESS STEEL PUMP



with the rubber impeller!

The new Jabasco Stainless Steel Pump offers a better way to handle a wide variety of chemical pumping jobs. Consider these outstanding advantages: (1) Made of high quality, corrosion-resisting 18-8 type 317M stainless steel. (2) Low cost, compact, gearless and noiseless. (3) Only *one* moving part — a tough flexible impeller of neoprene or pure gum rubber. (4) Handles many types of liquids — acids, alkalis, oils, pastes, viscous and abrasive. (5) Instant self priming — creates high suction with an operating vacuum in excess of 26". (6) Self-lubricating — the liquid being pumped provides lubrication between the pump body and the impeller. (7) Shaft bearings are located outboard, entirely independent of the liquid being pumped. (8) Operates in either direction and may be mounted in any position with equal efficiency. (9) Available either with ring packing or rotary type seals. (10) Provides a wide range of operating speeds from 100 to 1800 R.P.M. . . . delivers up to 22 G.P.M. . . . provides a maximum shut-off pressure in excess of 45 P.S.I. . . . and is capable of sustained operation at pressures up to 25 P.S.I.



Jabasco Stainless Steel Pump Model "EL" 1" intake and outlet ports.

JABSCO

For complete details on this model as well as other Jabasco Pumps, write: Jabasco Pump Company, 3802 Wilshire Blvd., Beverly Hills, California.

When inquiring specify CP A5926 — see handy form pages 2-3

New Literature

Dry Chemical Extinguisher Needs No Recharge

Despite the speed with which big city fire departments move, the time to prevent heavy fire loss is during the vital seconds after the first spark. For this, and for conflagrations in paint spray booths, grease pits, oil, gasoline and electrical fires, Dugas extinguishers and Plus-Fifty Dugas Dry Chemical are recommended and described in an eight page catalog. Unlike carbon — tetrachloride, it is claimed that Dugas Dry Chemical generates no toxic fumes, does not require periodic recharging. Endorsed by Underwriters' Laboratories and similar agencies. Product does not corrode, evaporate, freeze, spoil or cake, according to text. For class B and C fires, B materials, flammable liquids, solids, gases and C electrical equipment. To operate, pull locking pin, turn hand wheel, squeeze nozzle handle. Generates carbon dioxide and water vapor. Wheeled models, also described, contain nitrogen cylinder and dry chemical, have dual-stream nozzle adjustable for either long or fan stream. Illustrated specifications and cutaway diagram. Write for catalog.

ANSUL CHEMICAL COMPANY, Dept. CP, Marinette, Wis.

When inquiring specify CP A5927 — see handy form pages 2-3

★

Variations in the Removal of Pectic Substances From Cotton Yarn

A booklet summarizes the variations in the removal of pectic substances from cotton yarn in the mercerization process as a source of dye affinity variation in mercerized yarn. These variations are occasionally encountered in practice. They are noticeable as alternate dark and light bands in the dyed fabrics knitted from the mercerized yarn. Experimental results obtained on 40/2 combed cotton yarn show: (1) Cotton contains besides fats and waxes approximately 2% of organic non-cellulose material removable by plain water and approximately 3% of additional organic non-cellulose material removable by 1 to 5% caustic soda solution. (2) Untreated cotton yarn used in the studies showed no variation in the quantities of these non-cellulose substances and no variation in dye affinity. (3) Removal of the fats and waxes from the cotton yarn before or after mercerization has no effect on the direct dye affinity of the mercerized yarn. (4) Removal of the pectic substances takes place mostly in the wetting out baths. (5) The removal of the pectic substances varies directly as the dye affinity of the final yarn for direct dyes. (6) Removal also varies as the temperature and time of the wetting out baths. (7) For a definite condition of (6), removal is in direct proportion to the caustic content (up to 10% Tw.). (8) Pressure or squeezing on the yarn in the wetting out baths or in the caustic washes increases the removal. (9) In direct dyeing of yarn, the portion of the yarn that has had the most pectic removed dyes the deepest shades. A written request will bring the complete booklet.

DEXTER CHEMICAL CORPORATION, Dept. CP, 819 Edgewater Rd., New York 59, N. Y.

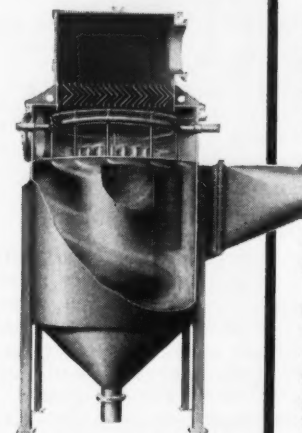
When inquiring specify CP A5928 — see handy form pages 2-3

★

Self-Lubricating Hardwood Bearings Outlast Machines

Maintenance-free, self-lubricating bearings of tooled hardwood impregnated with a high grade lubricating oil are described in a six-page, illustrated pamphlet. Recom-

SUPPRESS DUST WITH WATER



Cutaway view showing Hydro-Clone system of blading and baffling.

and reduce every particle to harmless sludge!

● Whiting Hydro-Clone — Type SH — precipitates heavy particles in the pre-cleaner . . . then removes the fine particles in the axial tube and disintegrator section directly above this tube. The resulting sludge drains to a dewatering tank, and water is recirculated. The water also removes obnoxious gases and dangerous fumes.

Hydro-Clone Equipment has no cloth screens or bags to clean, burn, or wear out . . . no spray nozzles to clog . . . no moving parts. Capacities from 2,000 to 30,000 cfm. Write for Bulletins FY-126 and FY-131 (low headroom type).

WHITING
CORPORATION
15667 Lathrop Ave.
Harvey, Illinois

FREE
New booklet of
Practical Point-
ers on Dust
Suppression.
Ask for Bulletin
FY-129.

When inquiring specify CP A5929 — see handy form pages 2-3

NEW
bulletin
tells
about
acid-
resistant



DURCO Adv. 17-GM

"PROCESS" PIPE This new bulletin gives you complete engineering data on a safe, long-lasting way to pipe sulfuric, hydrochloric, nitric and other metal-destroying acids.

The booklet tells you how useful Duron and Durichlor high-silicon cast iron pipe is for handling corrosives—how to install it, how to avoid misapplication. It lists advantages, limitations, dimensions, available fittings.

Write for your copy of bulletin 704.



THE DURON COMPANY, Inc.
DAYTON 1, OHIO, U.S.A.

When inquiring specify CP A5930 — see handy form pages 2-3

CHEMICAL PREVIEW

New Literature

mended for use where cleanliness and sanitation are paramount, as in food, textile, paper and pharmaceutical machines. Made to order promptly on receipt of specifications. Text states that, in many cases, these bearings have outlasted machines. Clean and dry to handle, locked-in oil is released by friction of moving shafts. Oil is reabsorbed in cooling. Uses include conveying equipment, printing and paper machinery, household appliances, agricultural machinery, cigarette and tobacco machines. Operate best on cold rolled shafting, but manufacturer assures excellent results on any shaft that is clean and accurately turned. Can be installed wherever pressure does not exceed 100 pounds per square inch and temperature not more than 125 degrees F. Pamphlet mailed on request.

NOLU OILLESS BEARING COMPANY, Dept. CP, 18 East Johnson St., Germantown, Philadelphia 44, Pa.

When inquiring specify CP A5931 — see handy form pages 2-3

★

Text Describes Three Forms of Industrial Carbon

"Industrial Carbon—Its Elemental, Adsorptive and Manufactured Forms" (C. L. Mantell, Ph.D.) is a 472-page, illustrated text on the carbon industries, completely rewritten from first edition published in 1928. Book is divided in four sections: elemental forms of carbon, covering diamonds, natural graphite, carbon black, acetylene black, lampblack, pigments, and respective uses; adsorptive forms, including bone black, vegetable decolorizing carbon, gas adsorbents and other adsorbent chars both metal and pharmaceutical; manufactured forms such as artificial graphite, electrodes, brushes, arc light carbons, specialties and resistors, materials of construction, porous forms, electronic tube anodes and refractories; and a section devoted to analytical and testing methods for all forms of carbon, together with tabulation and coordination of physical and chemical properties. Mail remittance of \$7.50 to publisher listed below, not to this office.

D. VAN NOSTRAND COMPANY, Inc., Dept. CP, 250 Fourth Ave., New York, N. Y.

When inquiring specify CP A5932 — see handy form pages 2-3

★

Offers 82-Page Book Covering Resins and Plasticizers

An 82-page booklet containing 18 charts and tables deals with resins and plasticizers. Products now under development by the manufacturer are discussed. Table of contents also includes detailed material on Coumarone-Indene Resins, plasticizing resins and oils, industrial uses of resins and plasticizers, emulsification of resins and plasticizing oils, an outline of testing methods, other chemicals and specifications for solvents. An index of figures, tables and formulae, as well as a general index, complete the text. Some subjects discussed include chemical characteristics, outstanding and physical properties, solution viscosity, compatibility and solubility. Section on industrial uses of resins and plasticizers covers flooring, printing ink, paper, adhesives, plastics, dental compounds, electrical insulation, chewing gum, textiles, waxes, leather, rubber and protective coatings. Write for "Resins and Plasticizers."

THE NEVILLE COMPANY, Dept. CP, Neville Island, Pittsburgh 25, Pa.

When inquiring specify CP A5933 — see handy form pages 2-3

WHEN



THEN



- CONDENSATION OCCURS IN UTILITY AIR LINES
- ERRATIC PNEUMATIC INSTRUMENTS ENDANGER PROCESSES
- YOU'D LIKE TO LENGTHEN LIFE OF AIR-DRIVEN TOOLS

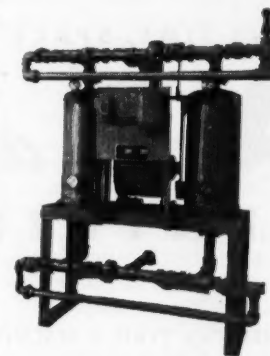
solve all 3 with 1 air-line dessicator

—30°F or even lower — for as little as a fraction of a cent per thousand cubic feet!

The coupon below will put you on the road to a profitable form of process insurance and equipment protection.

THIS ONE'S DESIGNED FOR INSTRUMENT AIR

Most recent addition to the large KEMP line of dynamic desiccators is this compact, radiation-cooled instrument air dryer, especially designed to combat the ravages of dirt and oil-laden moisture on the sensitive inwards of air instruments. Its twin 16" diameter silica-gel towers operate alternately on a 12-hour cycle — one drying air while the other is being electrically reactivated. Desiccates 34 cfm of completely saturated air at 150 psi and 90°F, then delivers it to the instruments dried to a dew point of —10°F.



KEMP OF BALTIMORE

PRECISION CARBURETION + ADAPTED COMBUSTION FOR INDUSTRY'S HEAT USING PROCESSES
ATMOSPHERE GENERATION + ADSORPTIVE DRYER SYSTEMS FOR PROCESS CONTROL AND PROTECTION

The C. M. Kemp Mfg. Co.
405 E. Oliver Street, Baltimore 2, Md.

Send me your new 48-page illustrated booklet on "Dynamic Dryers" ☐
Send your nearest field engineer to see me ☐

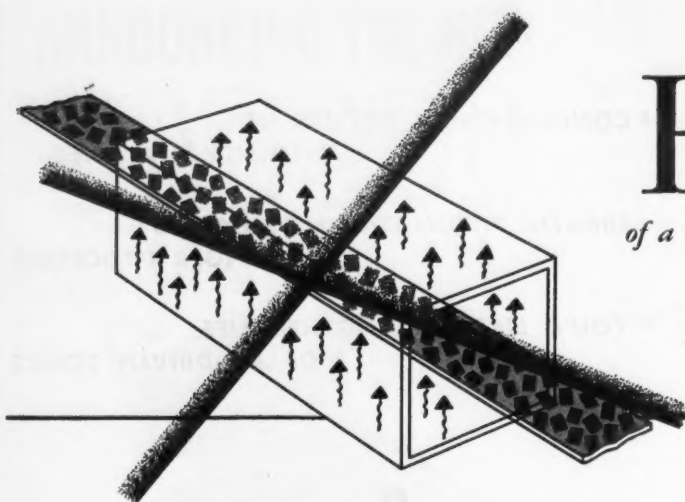
NAME

POSITION

COMPANY

PLACE

When inquiring specify CP A5934 . . . see information request blank, pgs. 2-3



How to speed up dehydration
of a macerated material without expanding
his drying facilities was a
problem that perplexed a food processor.

AGAIN... the answer is centrifuging

This case study is just one of the many applications in which centrifugal force as developed by AT&M Centrifugals has saved time, space and costs in the process industries. Now — while you're exploring new ways to lower unit production costs — investigate what centrifuging can do for you. A confidential study and recommendation by AT&M's experienced engineering service costs you nothing and does not obligate you in any way. The coupon will bring you evidence that AT&M Centrifugals can improve products at lower cost. AMERICAN TOOL & MACHINE COMPANY, 1425 Hyde Park Ave., Boston 36, Mass., 30D Church St., New York 7, N. Y.

SAVE TIME, SPACE AND COSTS WITH

A.T. and M. CENTRIFUGING

AMERICAN TOOL & MACHINE COMPANY,
1425 Hyde Park Ave., Boston 36, Mass.

Please send information on centrifuging applied to the following processes:

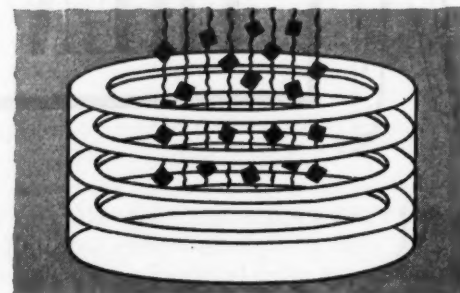
- ☐ Extraction ☐ Filtration ☐ Dehydration ☐ Coating
☐ Precipitation ☐ Sedimentation ☐ Impregnation

Write here any other process.....

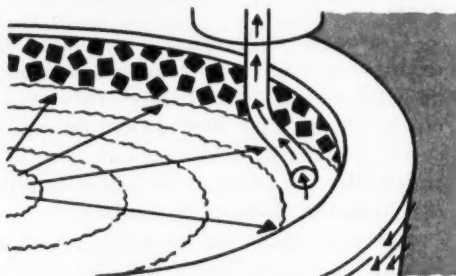
Name.....

Company.....

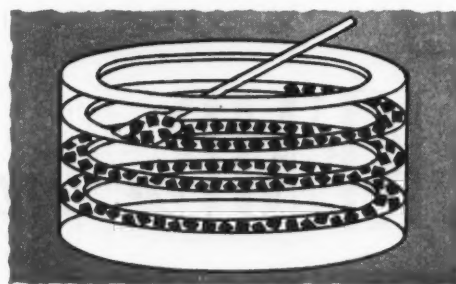
Address.....



AT&M specified a centrifugal with an imperforate basket and a built-in skimmer.



Centrifugal force, developed by high-speed rotation, builds up the solids on the baffled sides of the basket while the liquor is decanted over the top by the skimmer.



Then the cake, with most of its liquid removed, is plowed out and conveyed to the drier where drying time is greatly reduced.

New Literature

Conical Scruber Cleans Stone, Gravel, Gold Ore — Faster

Bulletin 37-A lists applications, operating principles, capacity and advantages of Hardinge Conical Scrubbers, used for scrubbing gravel stone, phosphate rock, gold ore and other materials. Available in seven models. Where adhering sand, silt, clay or clay balls on stone and gravel cause inferior concrete, this machine scrubs it clean. Large conical drum rotates on trunnion bearings, discharging contents into revolving trommel screen. A relatively small amount of spray water is necessary. Drum is said to revolve two or three times faster than other scrubbers, with less wear due to mass falling on itself instead of on scrubber lining. Large capacity per unit, no internal moving parts, no submerged bearings or packing glands, low power cost. One-fourth to one-half amount of water required as against systems using screens or similar equipment, text claims. Complete with diagrams, photographs and specifications, literature will be mailed on request.

HARDINGE COMPANY, Inc., Dept. CP, York, Pa.

When inquiring specify CP A5936 — see handy form pages 2-3

★

Rust and Corrosion Due to Brine Action Prevented by Treating System

Brine treatment to remove rust and corrosion from industrial refrigeration equipment is described in detail in a four page booklet. This brine treatment contains all the ingredients necessary to counteract reactionary causes of brine contacting metal whether the brine be of sodium chloride or calcium chloride mixture. Continued use of the treatment described will increase the alkalinity of the brine thereby destroying the acids and other corrosive elements naturally present in brine. There are no injurious chemicals in the solutions employed in the treatment. Rust that has already formed is removed, a protective film is established over the liquid covered metal surface, and the brine solution is definitely cleared up. Application consists of a simple mixing operation once a week and visits from the field representatives of the subject company. Information is sent those interested.

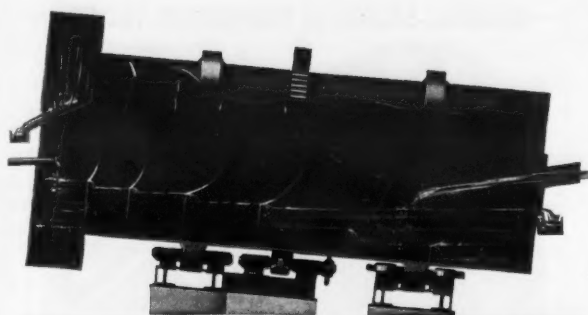
THE BROOKS BOILER TREATMENT COMPANY, Dept. CP, Cleveland, Ohio

When inquiring specify CP A5937 — see handy form pages 2-3

★

Blenders Insure Uniformity of Product, and Mixers Have Proper Design for Efficiency

Ribbon mixers and dry blenders are described and their dimensions and specifications set forth in an 8 page booklet. On the heavy duty ribbon mixers, standard agitator design consists of both an outer and inner spiral conveyor, one right hand and the other left. The outer spiral conveys the material toward the discharge orifice while the inner or smaller diameter tends to propel the material away from the discharge or in the opposite direction to the outer conveyor. Pitch design of both the outer and inner conveyor, as compared to diameter relation of the inner to the outer spiral, determines the efficiency of the mixer. Several drive arrangements are offered, among them: (1) Gear motor drive through gear and pinion or roller chain. (2) Gear motor drive direct on mixer shaft. Blenders feature a maximum blending efficiency per spin of the tumbler and the greatest allowable number of spins per unit time. Diagrams are complete in their description of the struc-



Counter-Current Classifiers

For making size separations of ores, sands, and other materials. Only one moving part. Will start fully loaded. **Bulletin 39-A.**

HARDINGE

COMPANY INCORPORATED
YORK, PENNSYLVANIA — 240 Arch St. • Main Office and Work:
NEW YORK 17—122 E. 42nd St. • 205 W. Wacker Drive—CHICAGO
SAN FRANCISCO 5—501 Howard St. 700 Bay St.—TORONTO

When inquiring specify CP A5938 — see handy form pages 2-3

NOZZLE No.					CAPACITY GALLONS PER HOUR AND SPRAY ANGLE AT 15 PSI PRESSURE (For Water)																
Type LN Female Conn.	Type NN Male Conn.	Type MN Male Conn.	Orifice Size	Core No.	10	15	20	25	30	35	40	45	50	60	70	80	100	150	200	300	
1/2 LN 60	1/2 NN 2	1/2 MN 2	0.016"	206																	
1/2 LN 60	1/2 NN 2	1/2 MN 2	0.020"	210																	
1/2 LN 60	1/2 NN 2	1/2 MN 2	0.030"	216																	
1/2 LN 60	1/2 NN 2	1/2 MN 2	0.038"	216																	
1/2 LN 60	1/2 NN 2	1/2 MN 2	0.042"	220																	
1/2 LN 60	1/2 NN 2	1/2 MN 2	0.042"	220																	
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1/2 LN 60	1/2 NN 2	1/2 MN 2	0.060"	225																	
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SEALED *Against* FUMES

No. 5421-A

For handling concentrated Sulphuric and other acids, difficult to seal by stuffing box packing ... **TABER Vertical Pumps** is a logical answer.

Since liquid is not in contact with the Taber stuffing box there is no leakage.

Taber Vertical Pumps are sturdily constructed for mounting in processing or storage tank, and to operate in a vessel sealed against fumes or gases.

PLEASE WRITE ON YOUR
LETTERHEAD FOR CONCISE TABER
Bulletin V-837

TABER PUMP CO. ESTABLISHED 1859
320 ELM STREET BUFFALO 3, N. Y.

Taber Pumps for Higher
Practical Performance

When inquiring specify CP A5944 — see handy form pages 2-3



New Literature

Special Built Time Switches For Volume Users Serve Industry In Novel Ways

A four page bulletin cites six examples of time switch installations in the low cost field for the special needs of original equipment manufacturers. These six have been chosen from numerous models and in each instance the timing operation has been achieved especially to do the intended job. Bulletin T-55 mailed on request.

AUTOMATIC TEMPERATURE CONTROL COMPANY, INC.,
Dept. CP, 34 East Logan St., Philadelphia 44, Pa.

When inquiring specify CP A5945 — see handy form pages 2-3

★

Move Dry, Pulverized Materials Economically By Pipe Line

Low operating costs plus equipment savings are the subject of this pamphlet. Three methods of conveying finely divided materials through pipe lines are described. These include the Fuller-Kinyon and Fuller-Fluxo systems, both for conveying dry, pulverized materials; and the Airveyor, a pneumatic conveyor for granular materials such as malt, grains, ground meals, soda ash, crushed coal and flaxseed. A Remote-Control Unloader, used principally for unloading bulk, such as cement from boxcars, barges and warehouse storage, and for conveying from cement mill stock houses to packer bins, is also described. Manufacturer recommends Fuller-Fluxo system for long-distance conveying, cites a typical installation where bulk cement is conveyed approximately 1-1/4 miles through a continuous pipe line. Cross-sectional diagram portrays complete brewery

GRINNELL-SAUNDERS DIAPHRAGM VALVES



WORKING PARTS Hermetically Sealed Off

Corrosive liquids cannot attack, nor can food or liquids containing suspended solids affect the working parts of the Grinnell-Saunders Diaphragm Valve. They are hermetically sealed off by the resilient diaphragm. Positive closure is assured even when foreign matter is trapped. Widely used for compressed air, gases and viscous liquids. Write for catalog descriptive of standard and special types. Grinnell Company, Inc., Executive Offices, Providence 1, R. I. Branch offices in principal cities.

GRINNELL

WHENEVER PIPING IS INVOLVED

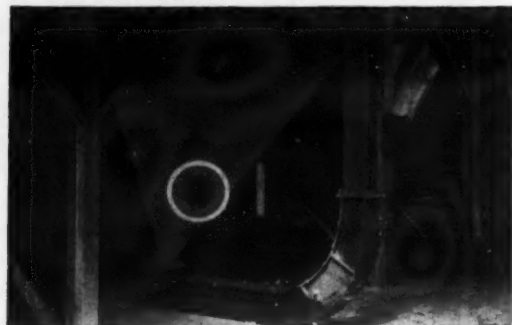
When inquiring specify CP A5947 — see handy form pages 2-3

For Easy, Economical Material Handling!

SYNTRON

"Pulsating Magnet"

ELECTRIC VIBRATORS



Powerful, pulsating electromagnets that bolt right onto that troublesome bin, hopper, or chute, and break down arching and plugging—eliminate damage from pounding and sledging.

Write for illustrated literature.

SYNTRON CO., 110 Lexington, Homer City, Pa.

"Vibra-Flow"

VIBRATORY FEEDERS



Controlled flow of bulk materials—hot or cold—dry or damp—from fine powders to large chunks—at rates from a few pounds to 500 tons per hour. Match the rate of feed with the capacity of grinders, crushers, screens, etc.

When inquiring specify CP A5946 . . . see information request blank, pgs. 2-3



A MOUTHFUL at EVERY BITE



● This is not only the claim of OWEN, the name symbolic of the highest grade Chemical Handling Buckets for 40 years—Operators everywhere, "on and off" the job, volunteer this testimony.

And — there's a reason. Owen-engineered buckets incorporate special features which have been continually improved.

THE OWEN BUCKET CO. Branches: NEW YORK • PHILADELPHIA
7050 BREAKWATER AVE. • CLEVELAND, OHIO CHICAGO • BERKELEY, CAL.

and **MORE BITES
PER DAY**

When inquiring specify CP A5948 — see handy form pages 2-3

New Literature

installation of an Airveyor simultaneously unloading trucks and boxcars, weighing and conveying either direct to brew house or to four storage bins while a branch line recovers malt from storage. A similar diagram shows Airveyor unloading alum from boxcars by suction, conveying it to receiver and thence to seven storage bins. Exhaust air from storage is cleaned by bag filters. Write for pamphlet, "The Solution to Your Conveying Problems."

FULLER COMPANY, Dept. CP, Catasauqua, Pa.

When inquiring specify CP A5949 — see handy form pages 2-3

★

Colloidization Enhances Utility of Graphite; Selection of Dispersions for Various Needs

Featured properties of colloidal graphite and the manner in which they extend its use to applications previously impractical are discussed in an illustrated twelve page booklet. This colloidal graphite consisting of microscopic particles dispersed in various liquids according to requirements has six general classifications of usage: (1) general lubrication; (2) extreme temperature lubrication; (3) parting; (4) impregnation; (5) electronic applications; (6) opaquing. A number of dispersions are discussed in some detail and their properties listed. Three water dispersions are offered. The choice for the application in question depends on the size of the particles. Because of concentration they are usually diluted with distilled water prior to use. Dispersion in oil, in volatile hydrocarbons, and in alcohol receive similar detailed treatment. The final section of the booklet is devoted to special dispersions utilizing solutions of resin and high solvency naphthas as vehicles. Attention is also directed to the organization's technical services and various technical bulletins available. Copies of this booklet on "Dag" Colloidal Graphite on request.

ACHESON COLLOIDS CORP., Dept. CP, Port Huron, Mich.

When inquiring specify CP A5950 — see handy form pages 2-3

★

Car Bottom Furnaces Handle Large and Varied Metal Products in many Heat Treating Processes

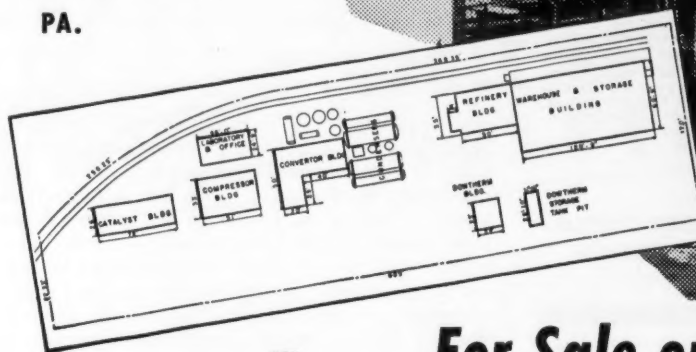
A 4 page booklet contains information on car bottom oil, gas and electric furnaces. They may be used for stress relieving welded steel structures and assemblies, the annealing, drawing or heating of large and irregularly shaped pressure vessels, forgings, sheets, tubes, bar stock, heating or carburizing large quantities of metal parts packed in pots or boxes, and for the firing of ceramic products. The car bottom furnaces are widely used because they offer mass or bulk loading on cars of a large quantity of product or of large heavy and irregularly shaped pieces. The work may be heated in batches on one or more cars in the furnace or continuously by movement in a straight line or in counter flow directions through a tunnel furnace. Where floor space is at a premium, elevator furnaces may be used for about the same applications as the car furnace. The car of work is raised by means of a hydraulic cylinder or other form of elevating device and is locked in the furnace so that the car bottom makes a tight seal with the furnace bottom. For solution heat treatment of lighter alloys of aluminum and magnesium the charge is suspended from a rack which is raised or lowered into a recirculating furnace by mechanical hoist. Diagrams and pictures complete bulletin no. 422 which may be requested.

W. S. ROCKWELL COMPANY, Dept. CP, 200 Eliot St., Fairfield, Conn.

When inquiring specify CP A5951 — see handy form pages 2-3

INCOMPLETE INDUSTRIAL PLANT ON NEVILLE ISLAND

PITTSBURGH,
PA.



This plant known as Plancor 2376, was planned for production by Pittsburgh Coke & Chemical Company, of 8 million pounds per year of Phthalic Anhydride. At the close of the war the requirements of Phthalic Anhydride grew less, and the project was never completed. Purchaser now has the opportunity to complete the plant according to his own requirements.

LOCATION: Approx. 2½ acres in close proximity to plant of former lessee on Neville Island, Pittsburgh, Pennsylvania.

BUILDINGS: The buildings and floor areas are as follows:

Catalyst preparation building, 1940 sq. ft.; Laboratory and office building, 1,100 sq. ft.; Compressor building, 1,680 sq. ft.; Warehouse building, 7,000 sq. ft.; Converter, refining and Dowtherm building.

Most of the framing is steel. Most of the walls are brick. About half of the roofs and floors are not yet installed. Floors are concrete. Roofs are of gypsum plank or transite. One is of precast concrete. Ceiling clearances mostly range between 15' and 20'. Heating and lighting are mostly not installed.

The percent of completion of these buildings ranges between 58 and 96 percent.

MACHINERY AND EQUIPMENT: Production equipment includes: salt heater and stack, including boilers, roasters, dryers, etc. Dowtherm heat unit. Towers—Naphthalene scrubber, crude still. Heat exchange equipment. Vacuum produc-

For Sale or Lease

(in whole or in part)

ing equipment. Storage and process tanks. Pumps, compressors, mixers, piping, instruments, etc. Complete equipment was never installed.

UTILITIES: Water—from 2 wells (off-leasehold). Other utilities furnished by local companies through the facilities of the former lessee.

TRANSPORTATION: Plant served by Pittsburgh and Ohio Valley Railroad. Pittsburgh Airport about 10 miles away. Write or call for illustrated brochure.

If you can qualify as a "small business", you will find that a high priority is available for your purchase of this facility through the Reconstruction Finance Corporation. Our regional offices will advise you how to obtain this priority certification.

Information contained herein is not intended for use as a basis for negotiations. War Assets Administration reserves the right to reject any or all proposals.

CREDIT TERMS ARE AVAILABLE

Address all inquiries and proposals to:

WAR ASSETS ADMINISTRATION OFFICE OF REAL PROPERTY DISPOSAL

Corner of Euclid Avenue and East 13th Street
Cleveland, Ohio

Farval could have saved this \$800 bearing expense

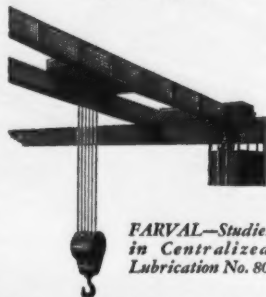
A MID-WEST manufacturer installed forty-one new overhead traveling cranes. All were roller-bearing equipped. Some cranes came from the builder Farval-equipped; others had to be hand lubricated.

Within six months, the value of Farval was clearly demonstrated. The cranes without centralized lubrication became involved in delays and replacements of bearings. On two 30-ton cranes, bearing replacements alone amounted to over \$800. On the Farval-equipped cranes, all bearings were lubricated from a safe central point and delays and expense for repair were unknown.

An overhead crane shutdown can be as serious as a stoppage of any floor-level machinery. Centralized lubrication is even more essential on isolated overhead equipment, which cannot be inspected from the floor and where you may risk serious injury to lubricate hard-to-get-at bearings.

With Farval every bearing receives oil or grease from a safe central station, in exact quantities, at regular intervals—sure protection between mechanical inspections. Farval—the Dualine System with the Positive Piston Displacement Valve—that has but 2 Moving Parts—is Fully Adjustable—and with a Tell-tale indicator at each bearing to show the job is done.

Protect your old cranes by installing Farval. Provide safety, lower maintenance and eliminate delays—ask for Farval on your new cranes. Write for Bulletin 29. The Farval Corporation, 3257 East 80th Street, Cleveland 4, Ohio. Affiliate of The Cleveland Worm & Gear Company, Industrial Worm Gearing. In Canada: Peacock Brothers Limited.



FARVAL—Studies in Centralized Lubrication No. 80



**CENTRALIZED SYSTEMS
OF LUBRICATION**

When inquiring specify CP A5953 — see handy form pages 2-3

New Literature

Demonstrate Merits of Low Pressure Spray Units In 5 Simple Tests

Spray equipment users who send for this three-color, 44-page catalog will find that it not only covers the manufacturer's complete line of low pressure spray equipment, but pictorially presents a series of five simple tests demonstrating merits of low pressure spraying. Tests demonstrate offspray, power savings, penetration and adhesion, finish and refrigeration. Text emphasizes importance of fitting equipment to the job, discusses the principles of low pressure, low pressure spray guns, automatic spray guns, nozzles and tips, extension types, spray gun accessories, pressure tanks and control heads, gasoline and electrically powered portable painting units, stationery compressors and air-motored agitators. Write for catalog 860.

ECLIPSE AIR BRUSH CO., Dept. CP, Newark 7, N. J.

When inquiring specify CP A5954 — see handy form pages 2-3

★

Pennies Spent On Steel Strapping Save Dollars in Shipping Damage

Nowhere does a penny wisely spent so often mean a dollar saved as in the protection of goods in transit. No better illustration of this point is needed than steel strapping, whose versatility in protecting shipments of everything from packed-in-glass foods to railway flatcar under frames is the subject of a 12-page, illustrated news bulletin. Brief, factual information concerning the time-and-dollar saving advantages of steel strapping for shipping aluminum pigs, showing design, weight, connections, special equipment



Do you need *fast adhesion* to get maximum production speeds from modern packaging machinery . . . to increase working floor space by reducing feed conveyor lengths . . . to permit immediate stacking or shipping?

Or, do you need *slow adhesion* . . . for seasoning before hand bottle labeling . . . for delayed contact sealing or assembling . . . for accurately aligned billboard posting?

SHOULD AN ADHESIVE SET

in a flash?

Remember, setting speed is only one of many properties an adhesive must have to do your specific job.

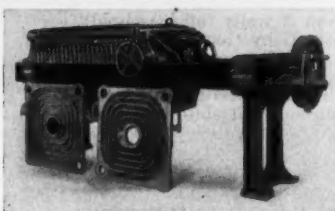
You can rely on National . . . with its long practiced, specialized skill . . . to give careful attention to every factor of your adhesive problem. Inquire—NOW!
270 Madison Avenue, New York 16, and other principal cities.

National ADHESIVES

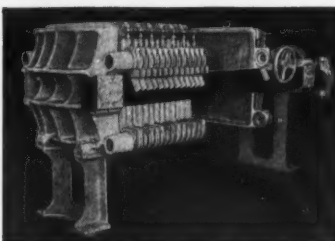
EVERY TYPE OF ADHESIVE FOR EVERY TYPE OF ADHESION

When inquiring specify CP A5956 — see handy form pages 2-3

A Filter for Every Need in Solids Recovery Clarification · Washing · Thickening · Extraction



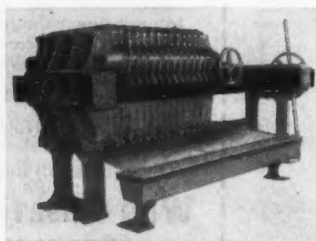
Closed delivery, washing type, stainless steel filter press with visible discharge for each chamber.



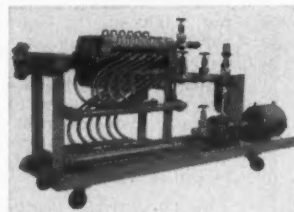
Shriver plate & frame continuous thickener reduces operating time, space and equipment needs.

Whether you're handling a few gallons per batch or 10,000 or more gallons per hour; whether your product is corrosive, abrasive, viscous or difficult to filter except under extraordinary temperature or pressure; whether you must use filter aids or special filter media to accelerate clarification; whether you must wash or blow out the cake after filtration, or thicken the slurry to eliminate settling — there's a wide range of types of Shriver Filter Presses in any size, of any required material of construction to assure meeting your exact processing requirements. Write for Catalog.

T. SHRIVER & COMPANY, Inc., 846 Hamilton St., Harrison, N. J.



Side feed, open delivery, aluminum filter press.



Portable filter press and pump with steam-heated filter plates.

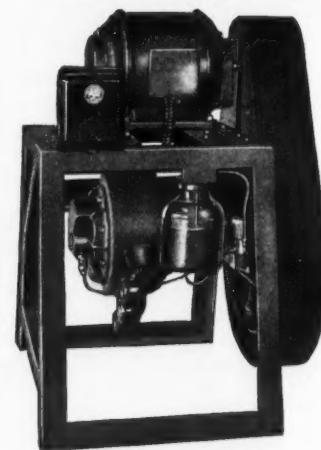
SHRIVER FILTER PRESSES

When inquiring specify CP A5955 . . . see information request blank, pgs. 2-3

ROTARY LAMMERT QUIET

VACUUM PUMPS

VACUUM TO 0.02 M.M. BAR. 3-580 C.F.M.



Investigate!
MODEL SWMF.

NEW!

Continuous
Self
Purging
Principle

Expels the
Contaminating
Influence!

ENDURING HIGH VACUUM PERFORMANCE

LAMMERT & MANN CO.

215-21 N. WOOD ST. CHICAGO 12, ILL.

A HALF CENTURY TO SCIENCE AND INDUSTRY OF SERVICE

When inquiring specify CP A5957 — see handy form pages 2-3

New Literature

blood plasma, steel drums and pails, rocket motors and other articles. Illustrated is the use of steel strapping on the end of a large propeller shaft and the smooth bearing surface of this unit which was designed for marine service. Strapping is shown holding together aluminum pigs on industrial flat cars. Cables used in the oil fields are strapped to 6500 ft. of pipe to aid in well drilling operations. It is shown how this strapping can reduce freight claims by securely anchoring "floating" loads in cars. Heavy machinery may be shipped in a space saving assemblage with the use of these straps to hold together large bulky parts. Even glass packed food products are safeguarded by being securely held to one location in a partly filled car. Steel stitching for roofing purposes is reported and photographs show the operation. In writing, request issue No. 17 of "Process News".

ACME STEEL COMPANY, Dept. CP, 2840 Archer Ave., Chicago 8, Ill.

When inquiring specify CP A5958 — see handy form pages 2-3

Modern Machinery Products Serve Varied Industries

A dust remover for machine mounting is one of the industrial tools treated in a 24 page catalog. It is easy to install on grinders, buffers, sanders, polishers, lathes, and other machines through the use of standard attachments. It may be so mounted that it can serve two machines if desired. Abrasive dust, metal particles, fine chips, flakes and other dirt are thoroughly removed with this machine. 500 cu. ft. of air per minute is drawn through the collector by the use of two inlets, providing ample suction. Another item treated is an interchangeable live center insert for all centered and uncentered work. This device provides the advantages that accrue from the use of four interchangeable center pieces or inserts. It meets the demands for all types of centered lathe work. It enables lathes to turn heavier loads faster, and it saves the costs of fast wearing dead centers. Also described a group of balancing ways that provide a new step in the static balancing (without centering) of pulleys, fly wheels, crankshafts, fans, grinding wheels, and armatures. They are accurate to .007 Oz. Ins. and are adjustable and portable. Other devices described include: universal and independent chucks, tool room etchers, riveting hammers, and pneumatic hand tools. This literature will be promptly sent on request.

IDEAL INDUSTRIES INC., Dept. CP, 1296 Park Ave., Syracuse, Ill.

When inquiring specify CP A5959 — see handy form pages 2-3

Types, Advantages and Cost of Low Pressure Evaporators

Low pressure evaporators for distilling pure, fresh water from bays, lakes, rivers, canals or sea water are topic of 12-page text, with diagrams and photographs. A guide book of distilling plants suitable for both stationary and marine engineering conditions. Under "Types of Evaporating Plants" are treated the film type, submerged type, submerged tube high pressure type, and submerged tube low pressure type. Capacities available up to 120 tons per day. Comment includes cost of evaporation and field maintenance service offered. Booklet sent on request. Title: "Low Pressure Evaporators."

CONDENSER SERVICE AND ENGINEERING CO., INC. Dept. CP, 95 River St., Hoboken, N. J.

When inquiring specify CP A5960 — see handy form pages 2-3

DESIGNED FOR Dependability and Durability



"VAREC" Approved Nozzle Type Angle Relief Valves are top-guided and have high capacities, featuring minimum overpressure and blow-down in water, oil, steam, air, gas or chemical service with pressure up to 900 P.S.I. and temperatures up to 950° F.

Available in many size and material combinations, "VAREC" Approved Relief Valves perform satisfactory service with maximum safety at minimum maintenance cost.

Thousands are in operation by U. S. Navy, Army Engineers, R.F.C., U. S. Maritime Commission, Petroleum Refiners, Petro-Chemical Plants, etc.

ANGLE RELIEF VALVES

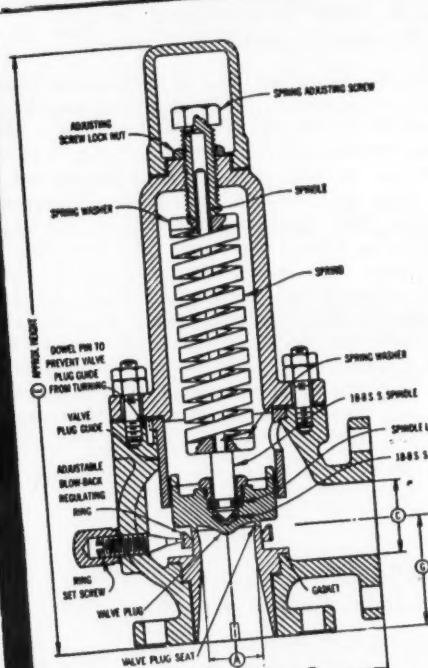


FIGURE No. 78

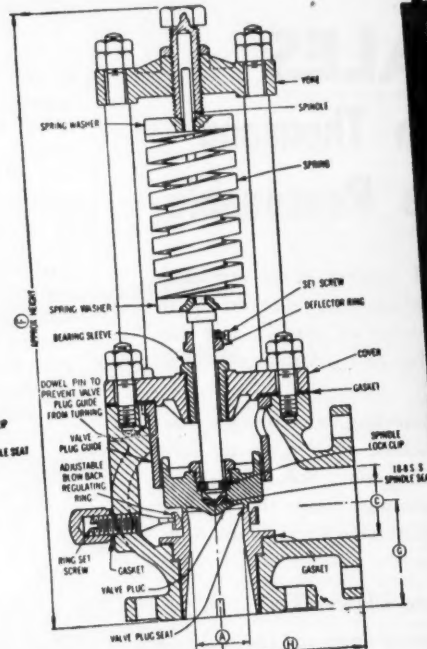


FIGURE No. 795

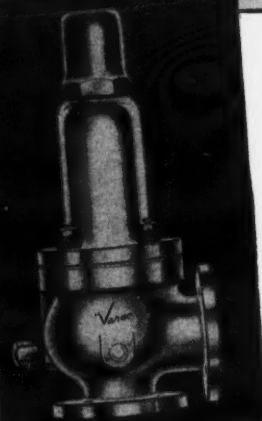


FIG No. 78

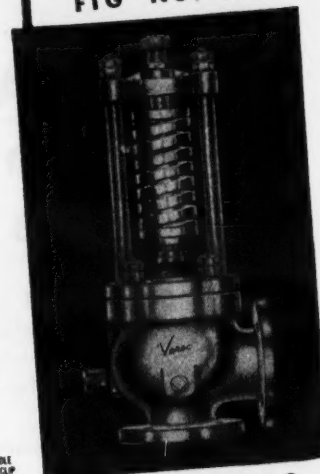


FIG No. 795

THE VAPOR RECOVERY SYSTEMS COMPANY COMPTON, CALIFORNIA

NEW YORK CITY — CHICAGO, ILL. — HOUSTON, TEX. — TULSA, OKLA.
Agencies Everywhere — Cable Address VAREC-COMPTON (All Codes)

THE PACE SETTER SINCE 1928



"VAREC" P-7 Catalog describing in detail Angle Relief Valves and other "VAREC" Equipment is yours for the asking.

When inquiring specify CP A5961 . . . see information request blank, pgs. 2-3



SCALES

One Or a Thousand The Cost Is Reasonable

Scales by our special process at an attractive price — regardless of quantity — even up to 100" long. Lineal scales of plastics and special materials can be had individually calibrated.

These scales are outstanding in accuracy — being made from a machine divided master scale (or individually calibrated). Scientific equipment and skilled personnel insure this quality. The easy-to-read feature characterizes all Maymer scales.

Yes, Name Plates, Too

We make name plates of engraved lamacoid — distinctive in appearance and reasonable in cost. Whatever your needs — scales, indicators, dials, name plates — in whatever quantity — it will pay you to get our prices.

MAYMER

CORPORATION

10896 BERE A ROAD CLEVELAND 2, OHIO

When inquiring specify CP A5962 — see handy form pages 2-3

New Literature

Instruments and Control Components Provide Fine Point Regulation in Process Plants

Instruments and controls for the process and food industries are covered in an informative 8 page booklet. Process controllers, control components, measuring components and instrument combinations receive illustrative treatment. Application data such as sizes, pressure standards and ranges are listed for the various components. Typical control systems of the single and also the multiple type are shown. A standard recorder-controller is furnished for temperature, pressure, flow, level, density, ratio, per cent oxygen and for per cent combustibles. Various measuring circuits used with the instruments described may be arranged so that the instruments record computed results based on several measurements. Ratios, products, sums, and differences may be automatically and continuously recorded so that process information is obtained in the form of news rather than history. Bulletin 17 is available to interested parties.

BAILEY METER CO., Dept. CP, 1050 Ivanhoe Rd., Cleveland 10, Ohio.

When inquiring specify CP A5963 — see handy form pages 2-3

★

Is It Hard To Machine? Maybe Precision Casting Is Cheaper!

Certain materials difficult to forge or machine can be more economically precision-cast. This important consideration is the theme of a four-page, illustrated bulletin. Manufacturer employs two individual methods: (1) "lost wax" and (2) plaster molding process. It is pointed out that practically every type of metal can be cast except magnesium alloys. Tolerances can be held from .003 to .008 per inch plus or minus, depending on form, mass and quantity. Shown are a variety of typical plaster precision castings of intricate design, actual machining of which was either completely eliminated or reduced to a minimum. Castings up to 15 inches in one dimension and up to 20 pounds total weight are feasible. Features and general description are included. Parts are pictured and described by number. A six inch rule on pictures demonstrates size relationship. Bulletin 19B6451.

ALLIS-CHALMERS MFG. CO., Dept. CP, Milwaukee, Wis.

When inquiring specify CP A5964 — see handy form pages 2-3

★

All-Purpose, Acid-Alkali Proof Resinous Cement Has Many Uses

Illustrated pamphlet describes acid-alkali proof resinous cement, said to be immune to nearly all commercial acids, alkalies, salts and solvents. Includes impressive resistivity chart. Product especially designed for battery and chemical plants, dairies, dye manufacturers, food and soap plants, oil refineries, ordnance works, pickling houses, pulp, paper and steel processing mills, rayon plants. Installations of this type said to have been in operation 10-15 years with little or no maintenance cost. Compound has initial set period of three hours at 75 degrees F. final set taking 36-48 hours. Components store indefinitely without deterioration if kept dry. Physical properties: 1200-2400 pounds psi tensile strength; 14,000-16,000 pounds psi compressive strength. Mortar form weighs 100 pounds cubic foot, safety factor included. Thermal resistance up to 350 degrees. Color: black. Uses include high temperature pickling installations, constructions involving high tempera-

Save production time with a SHOPLIFTER

One man can handle heavy dies up to 500 lbs. alone.

Handy for general shop lifting jobs—loading trucks, etc.

Easily moved about on the 4" diameter wheels.

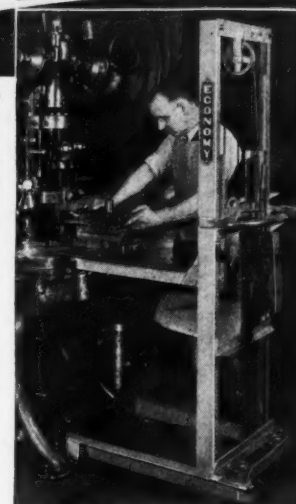
Platform, steel plate, 24"x24"
Overall height—6'0"
Platform lift—4'6"

Floor lock (optional) holds machine firmly to the floor.

Other Economy Lifting Machines of heavier capacities up to 5000 lbs. available.

Write for catalog.

PROMPT DELIVERY
2691 W. Van Buren St.
Chicago 12, Ill.



Price \$157.50

Floor lock \$10.00 extra.
Full Freight Allowed

ECONOMY ENGINEERING CO.

When inquiring specify CP A5965 — see handy form pages 2-3

SPRACO NOZZLES

Write for NOZZLE CATALOG to
SPRAY ENGINEERING CO.
125 CENTRAL STREET • SOMERVILLE 45, MASS.

When inquiring specify CP A5966 — see handy form pages 2-3

EVER TRY TO PUMP WHITE LEAD?

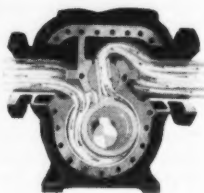


KINNEY PUMPS

DO IT!

With the Kinney SD Rotating Plunger Pump you can handle many difficult materials — such as • Asphalt • Gassy molasses • Edible oils • Fig newton paste • Cup grease • Petroleum and Chemical Products

The construction of this famous pump is simplicity itself . . . it has no valves, springs, or gaskets and only one stuffing box. Displacement is positive — the pump is accurate as a meter. Unique Kinney design, with two plungers set 180° apart, gives continuous flow and eliminates foaming even when handling viscous materials with entrained gas. These Kinney Pumps have a fine record for long life and trouble-free performance — after twenty-five years of service many are on the job still operating to full capacity.



Cutaway View Showing Flow

KINNEY MANUFACTURING CO.
3573 WASHINGTON ST., BOSTON 30, MASS.

New York • Chicago • Philadelphia • Los Angeles • San Francisco

We also manufacture Vacuum Pumps, Clutches and Bituminous Distributors.

When inquiring specify CP A5967 — see handy form pages 2-3

New Literature

tures and/or alternating acid-alkali processes, pits, sewers, vats, walls, floors, towers, flues. Literature mailed on request.

NUKEM PRODUCTS CORPORATION, Dept. CP, Buffalo 20, N. Y.

When inquiring specify CP A5969 — see handy form pages 2-3

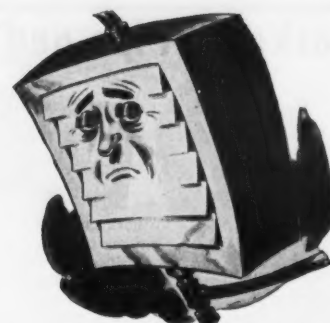
★

Emery Flooring Offers Nine Advantages to Plant Owners; Eases Trucking Conditions

A four page bulletin describes nine better flooring features that result from the application of emery flooring to industries such as the dairy and creamery industry. This flooring is made of an aggregate to which only cement and water are added. Material for the composition is scientifically selected, crushed and graded into rough shaped sizes which form the entire aggregate. It has a natural clinging affinity for cement. The flooring will withstand heavier loads, has unusual wearing qualities, does not chip or crack, and is non-skid and dustless. It will also withstand both moisture and heat conditions and is resistant to oil and greases and most commercial acids. It can be easily laid by maintenance crews or local contractors. Bulletin 602 on this material is promptly sent anyone requesting it.

WALTER MAGUIRE CO., INC., Dept. CP, 330 W. 42nd St., New York 18, N. Y.

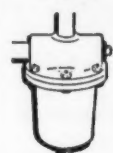
When inquiring specify CP A5970 — see handy form pages 2-3



LET SUPER-SILVERTOP pull the plug on loggy unit heaters



In-Line



Elbow

Water-logged unit heaters pour on the heat when you get the water out and keep it out. Super-Silvertops pull the plug and throw it away! How? By operating on the presence of water instead of its temperature. Presence of water, hot or cold, causes the Anderson Super-Silvertop to discharge.

Super-Silvertop is the inverted bucket trap that gives simplified piping without cored passages or split (pierced) gaskets. It's the trap with guided bucket, easy-to-remove valve and seat, increased capacity per dollar and a proved record of trouble-free operation.

A copy of the 40-page book, "How To Choose A Steam Trap", is yours for the asking. Would you like to have a copy?

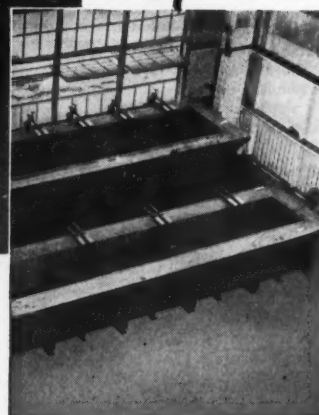
THE V. D. ANDERSON COMPANY
1954 West 96th Street • Cleveland 2, Ohio

When inquiring specify CP A5971 — see handy form pages 2-3

YOU GET ALL FOUR WITH THE "KARBATE" BRAND

Plate-Type HEAT EXCHANGER

- 1 COMPACTNESS
- 2 SHOCK RESISTANCE
- 3 HIGH HEAT TRANSFER
- 4 CORROSION RESISTANCE



Photos show compactness and flexibility of installation. Cut-away shows how tubular channels pass heating or cooling liquid within corrugated block.

For pickling, etching, plating, and cleaning processes, the "Karbate" Plate-Type Heat Exchanger is ideal. It alone combines the most desirable properties required of a tank-type heater — compactness, shock resistance, high heat transfer, and corrosion resistance.

In form, it is a compact plate with interior tubular channels. It extends only a few inches from the tank wall. Individual units may be joined in multiple to provide the desired capacity.

Made of "Karbate" impervious graphite, it is resistant to mechanical and thermal shock and has an unmatched heat-transfer rate. Moreover, it is unaffected by hydrochloric, dilute sulphuric, mixtures of nitric and hydrofluoric acids, or other corrosive solutions.

For your copy of detailed folder, ask for Catalog Section M-8804. Write Dept. CP.

The words "National" and "Karbate" are registered trade-marks of National Carbon Company, Inc.

NATIONAL CARBON COMPANY, INC.
Unit of Union Carbide and Carbon Corporation

UCC

30 East 42nd Street, New York 17, N. Y.
Division Sales Offices: Atlanta, Chicago, Dallas, Kansas City, New York, Pittsburgh, San Francisco

When inquiring specify CP A5972 . . . see information request blank, pgs. 2-3

WORRIED WITH SNAGS, RIPS, TEARS?

IT CAN'T HAPPEN HERE!

That's why EDMONTS are fast replacing ordinary rubber gloves on rough, tough industrial jobs. Fabric strengthens rubber coating, won't stretch or weaken at wearing points. Soft inside—gloves slip on and off easily—no tugging.

Dip-coated with specially compounded synthetic rubber. All advantages of natural rubber, plus resistance to oil and solvents. Liquid and acid-proof. Longer, safe wear with lower replacement costs. Sizes for men and women, gauntlet and knit wrist styles. Ask your jobber or write for information.

LOOK FOR THE FABRIC LINING

Fabric-Lined RUBBER GLOVES

Edmont

TRADE MARK REG. U.S. PAT. OFF.

501 ORANGE ST. . . . COSHOCTON, OHIO

When inquiring specify CP A5968 — see handy form pages 2-3

Jacketed Pipe and Fittings



Jacketed 90° Elbow



Jacketed 3-way Plug Cock.
Note threaded plug adjustment, with lock nut.

**FOR MAINTAINING
UNIFORM TEMPERATURE (HOT
OR COLD) IN PROCESS PIPES**

Wherever processing operations require the maintenance of uniform temperature (hot or cold) in the process pipes, a Hetherington & Berner Jacketed Pipe System will meet every requirement of accurate, economical processing. Heating medium may be either hot oil for high temperatures, steam for medium temperatures, or hot water for low temperatures. Cold water for cooling.

At right: Jump-over pipes prevent heating (or cooling) medium from entering process pipe in transferring it from jacketed line to fittings, or from fitting to fitting.



Write for Bulletin S-44



HETHERINGTON & BERNER INC.

711 KENTUCKY AVE., • INDIANAPOLIS 7, INDIANA

When inquiring specify CP A5973 — see handy form pages 2-3

New Literature

Overhead Chain Conveyors Increase Capacity

Stockrooms, warehouses, packing and shipping departments in particular will want this booklet on overhead chain conveyors. The conveyors systems offered are designed to interlock and produce a smooth flow of materials through all operations. In one installation not only were thirty or more stations of manufacture progressively serviced by overhead conveyor, but automatic processing on the conveyor was actuated at some of the stations. Stock is available for immediate use in assembly or order filling without trucking or needless handling. Ceiling transportation takes empty carton or other object handling off floors and out of aisles. Booklet mailed on request.

LAMSON CORPORATION, Dept. CP, Syracuse 1, N. Y.

When inquiring specify C PA5974 — see handy form pages 2-3

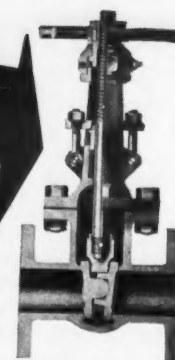
★



Low Temperature Welding Rods Solve Metal-Joining Problems

An eight-page, illustrated review suggests peacetime production applications from wartime uses of low temperature welding rods which, it is claimed, bond to base metals well below base metal melting point; form exceedingly strong joints through surface alloying; give fast, strong bonds at low cost; and avoid dangers of stress and distortion common to other methods of welding and brazing. Text presents production and maintenance low temperature welding for a variety of uses, from delicate aluminum to

**Be CERTAIN of
valve composition**

**Specify
Cooper "Certified"
Stainless Steel Valves**



The Cooper Certificate you receive with your  valve is your proof that the composition of  Stainless Steel Valves meets your exact specifications.

By registering the analysis of each heat and stamping each casting with its heat number Cooper makes positive identification of every unit quick and easy . . . duplication of analysis for re-orders simple.

"Breathing" bonnets on Cooper Valves compensate for expansion and contraction from temperature changes . . . prevent damage to the stem and operating-nut threads.

Sold through largest Stainless Steel distributors in the country. Check with your local distributor.

CA-114

THE Cooper ALLOY FOUNDRY CO.
150 BLOY STREET • HILLSIDE, NEW JERSEY

When inquiring specify CP A5976 — see handy form pages 2-3

For Economical Material Handling JONES SKIP HOIST DRIVES

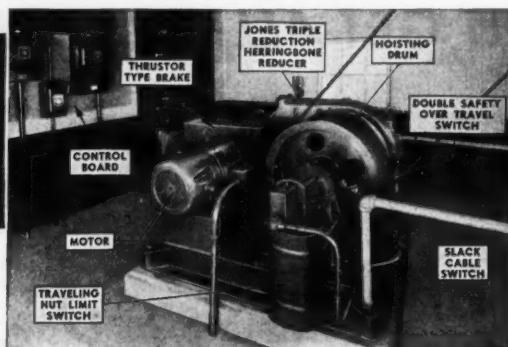
FOR speedy operation, reliable service and over-all economy the Jones Skip Hoist Drive has made a name for itself in a wide variety of material handling service. These skip hoist drives are built as complete units by the Jones organization in several types with base to take any motor specified by the purchaser. They are equipped for all the modern protective devices such as cam or nut type limit switches, solenoid or disc type brakes and slack cable switches. The drives are single, double, or triple reduction Jones Herringbone Speed Reducers, built to stand up under the many years of pounding that a skip hoist drive has to take. The shafts are supported in roller bearings, with rolling action, rack generated gear and pinion teeth to insure easiest possible starting with low starting-peak loads. All reducer bearings and gears are automatic oil-bath lubricated.

The Jones organization has an extensive file of information on skip hoist drive problems and will be pleased to work with you on any problems involving such applications.

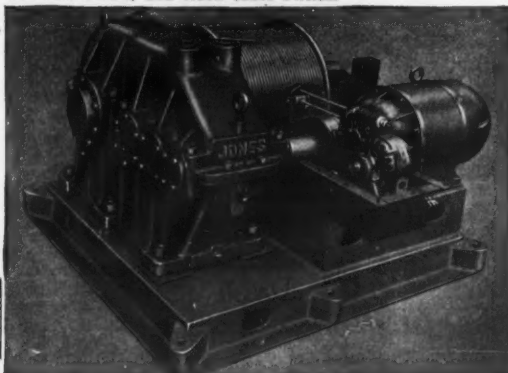
W. A. JONES FOUNDRY & MACHINE CO.
4455 Roosevelt Road, Chicago, Illinois

Jones

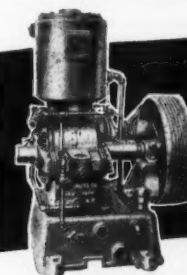
HERRINGBONE • WORM • SPUR • GEAR SPEED REDUCERS
EST AND MOUNTED TOOTH GEARS • V-BELT SHEAVES
ANTI-FRICTION PILLOW BLOCKS • PULLEYS
FRICTION CLUTCHES • TRANSMISSION APPLIANCES



• The view above shows a typical Jones Skip Hoist Drive installation while the view below shows one of the Jones units equipped with traveling nut type limit switch, motor actuated brake, and slack cable switch.



When inquiring specify CP A5975 . . . see information request blank, pgs. 2-3



**For High Speed
High Vacuum
and Long Service**

**BEACH-RUSS
Rotary Piston
HIGH VACUUM
PUMPS**

Type RP Pump for wet or dry vacuum; 7 sizes from 15 to 750 c.f.m., with special lubricating system and water-oil separator; perfect vacuum sealing, slow pump speed increases life.

The way to improve your vacuum processes in chemical or food manufacture, in medical, metallurgical or electronic work, is to produce high vacuum in the system. Beach-Russ Pumps give sustained high vacuum — in the low micron range — with the highest mechanical efficiency at low power cost, and quiet, vibrationless operation.

Built to last longer with minimum service, Beach-Russ Pumps have proved their value to industry in thousands of installations during the war, when high quality performance was an urgency. Outstanding processing plants use them. Bulletin 80 tells why.

BEACH-RUSS COMPANY
Vacuum Pumps • Compressors • Liquid Pumps
42 CHURCH ST. NEW YORK 7, N. Y.

When inquiring specify CP A5977 — see handy form pages 2-3

New Literature

heavy stamping equipment. Three photo-micrographs taken at 500 diameters illustrate the well-formed bonds which are possible by use of these methods. Laboratory pictures show development of new alloys and fluxes. Text recommends use in cases where speed is a factor where finishing and machining must be reduced or eliminated; physical properties must be retained; or brazing and soldering are unsatisfactory. A handy reference list of rod performances is included. Chart covers bonding temperatures, remelting temperatures, strengths, brinell hardness, color match, electrical conductivity, corrosion resistance, composition, and preparation of types of joints. Literature mailed on request.

EUTECTIC WELDING ALLOYS CORPORATION, Dept. CP, 40 Worth St., New York 13, N. Y.

When inquiring specify CP A 5978 — see handy form pages 2-3

★

Centrifugal Refrigeration For Cooling Process Liquids

Because of their large volume capacity centrifugal refrigeration compressors are useful to produce extremely low temperatures (-50° to -100° F.). A booklet describes their construction and application features. The refrigeration system consists of a compressor, condenser, and evaporator together with the various auxiliaries. Water or brine to be cooled is passed through the inside of the evaporator tubes and heat passes from it through the tube walls into the surrounding liquid refrigerant causing the refrigerant to boil off as a gas. The gas passes up through the tube section into the upper portion of the evaporator and is removed from there by the compressor. In the condenser, water is circulated through the inside of the tubes. Sizes offered range from 150 to 2600 tons refrigeration effect per single unit. Refrigerants used are halogenated hydrocarbons such as Freon-11 and 12 and 114. Hydrocarbon refrigerants including butane, isobutane, and ethylene may also be used. Freon-11 and 114 are low pressure refrigerants and are non-toxic. Charts and pictures aid in the proper selection of this type of equipment. The booklet may be secured on request.

WORTHINGTON PUMP AND MACHINERY CORPORATION, Dept. CP, Harrison, N. J.

When inquiring specify CP A5979 — see handy form pages 2-3

★

Mechanical Foam Stops Large Oil Tank Fire in 4 Minutes, 2½ Seconds

Fire is generally extinguished in one of two ways: by cooling the burning material to a point below its ignition temperature, or by smothering it. In the latter method, the burning material is separated from the air which supplies the oxygen essential to combustion. Water is an effective cooling medium for ordinary materials, such as paper, cloth and wood but in the case of oil fires it is too dense and sinks through the oil. Foams meet this objection in that they readily float on the surface of almost any burning material and provide a flexible blanket of protection between the burning material and the oxygen of the air. An 18-page booklet explains applications and the sizes and uses of the piping equipment used in connection with the foams. It is available on request.

PYRENE MANUFACTURING COMPANY, Dept. CP, Newark 8, N. J.

When inquiring specify CP A5980 — see handy form pages 2-3

It's the **SIDE**
OF A V-BELT
that DOES the **WORK!**
and GETS the **WEAR!**

That's Why the

★ **CONCAVE SIDE**
is **IMPORTANT!**

(A GATES PATENT)

Look at any V-Belt in its sheave groove and you see at once that the sidewall is the part that gets the wear!

The *sidewall* is what grips the pulley. The sidewall picks up the power from the driver pulley, transmits that power to the tension member, then grips the driven pulley and transmits the power to it!

That explains why you have always noticed that the sidewall of the *ordinary* V-Belt is the part that wears out first. Clearly, anything that lengthens the life of the sidewall will lengthen the life of the belt.

The simple diagrams on the right show exactly why the ordinary, *straight-sided* V-Belt gets excessive wear along the *middle of the sides*. They show also why the Patented Concave Side *greatly reduces* sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belts can possibly give.

★ **MORE Important NOW**
Than Ever Before!

Now that Gates Specialized Research has resulted in V-Belts having much stronger tension members—tension members of Rayon Cords and Flexible Steel Cables, among others—the sidewall of the belt is often called upon to transmit to the pulley much heavier loads. Naturally, with heavier loading on the sidewall the life-prolonging Concave Side is more important today than ever before!

THE GATES RUBBER CO., Denver, U. S. A.
World's Largest Makers of V-Belts

GATES VULCO ROPE DRIVES

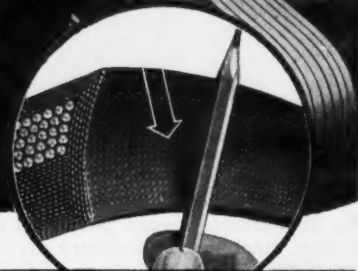
Engineering Offices
and Jobber Stocks

IN ALL INDUSTRIAL CENTERS of the U. S. and
71 Foreign Countries

—When inquiring specify CP A5981 . . . see information request blank, pgs. 2-3—

**V-Belt
In Sheave**

Clearly, it's the sides of a V-Belt that do all the gripping on the pulley and get all the wear against the sheave-groove wall. That's why longer life for the sides means longer life for the belt!



**Straight Sided
V-Belt**

FIG. 1

How Straight Sided
V-Belt Bulges
When Bending Around
Its Pulley



You can actually feel the bulging of a straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

**Gates V-Belt with
Patented Concave
Sidewall**

FIG. 2

Showing How Concave
Side of Gates V-Belt
Straightens to Make Perfect
Fit in Sheave Groove
When Belt Is Bending
Over Pulley



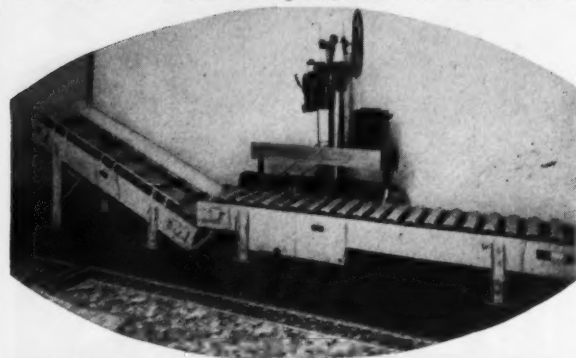
No Bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt!

Gates

THE MARK OF SPECIALIZED RESEARCH

4611

Engineered FOR HEAVY DUTY BAG CLOSING JOBS!



CLASS 20500. Here is a complete, engineered unit that meets every requirement for many plants. Choice of controls, conveyors, and sewing heads. For information on this and other Union Special units, ask for Bulletin No. 200. Union Special pioneered the use of filled bag closing machines in industry by building equipment especially designed to do the job better . . . faster . . . more economically. **TODAY** Union Special is your best assurance against rising costs . . . tight production schedules . . . and plant interruptions. Take advantage of Union Special's long experience in solving filled bag closing problems. **UNION SPECIAL MACHINE COMPANY, 442 N. Franklin St., Chicago 10, Illinois.**



By Union Special

When inquiring specify CP A5982 — see handy form pages 2-3

New Literature

Oven Dries Floor Coverings on Loops 35 Ft. High With Windmill Type Apparatus

Industrial drying practice together with a large amount of equipment description and discussions on principles involved are contained in a 20 page booklet. Fundamentally a dryer is of the batch type or of the continuous type. The batch type is generally suited to small production or a complicated sequence of drying conditions. The continuous dryers constitute a very large group of assorted types. They may be broadly divided into "web" dryers and "particle" dryers. The latter handle granulars, powders, lumps, and large shapes. The continuous web dryers are designed for continuous webs of paper, textiles, films, etc., which may be handled on supporting conveyors, rolls, festoon racks, and similar equipment. Continuous particle dryers include apron conveyors, rotaries, drum dryers, etc. There are three methods of applying heat: radiation, conduction, and convection. Units are described in all three fields and in combinations of them as is an oven designed for infrared radiation and air circulation with each type of heating properly controlled. The source of heat in the ovens offered may be steam, hot water, electricity, gas, or oil. Insulated panel construction allows fast assembly in the field. Many special installations are described including one involving the drying of floor coverings in loops 35 feet high on a windmill type apparatus. For complete information consult bulletin 131 which is available.

J. O. ROSS ENGINEERING CORPORATION, Dept. CP, 350 Madison Ave., New York 17, N. Y.

When inquiring specify CP A5983 — see handy form pages 2-3

When you need

CASTINGS

that are **CORROSION-RESISTANT**
RUSTPROOF

STRONG
TOUGH
HARD . . .

. . . you get *all* these properties in castings of Nickel or Monel.*

You get castings that are stronger and tougher than rolled structural carbon steel.

Yet they're machinable and weldable. They're smooth, hard and *rustproof*. They resist impact, mechanical abuse, and a wide range of corrosives.

Used for agitators, rolls, pump casings, nozzles, valves, impellers and various machinery parts, Nickel and Monel castings protect product purity, lengthen equipment life and reduce maintenance costs.

Conveniently located distributors carry Nickel and Monel fittings in stock. Couplings, 45° and 90° elbows, tees, crosses, unions, caps and plugs are available in sizes from 1/8" to 3" IPS.

For further information about stock fittings, or the suitability of Nickel and Monel castings in your processes, write:

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York 5, N. Y.

NICKEL INCO ALLOYS

MONEL "K" MONEL "S" MONEL "R" MONEL "KR" MONEL "INCO" NICKEL "L" NICKEL "T" NICKEL "P" Reg. U. S. Pat. Off.

When inquiring specify CP A5984 — see handy form pages 2-3



HIGHEST QUALITY GARDWELL OIL-CHEM SAFETY CLOTHING

Resists Oils, Grease, Acids and Water — Feather-weight — Extremely Durable and Long Wearing — Made from Plastic Sheeting, not a coated fabric. Sewed with special acid and oil resisting thread.



★ **GARDWELL OIL-CHEM COAT** made with seamless front closes in back with eyelet and ties. Has close fitting collar and elastic wrists, leakproof shoulder and side seams. Available in any length or size.



★ **GARDWELL OIL-CHEM APRON.** Outlasts other materials many times for workers in oils, grease, chemicals, etc. Available in bib or waist styles, in a wide range of sizes or to order.

Write for complete information and big catalog of safety clothing and equipment.

Safety CLOTHING AND EQUIPMENT Co.
7016 EUCLID AVENUE CLEVELAND 3, OHIO
PHONE ENdicott 1722

When inquiring specify CP A5985 — see handy form pages 2-3

IF YOU WANT TO SHOW
Pleasing Profits

Mechanize your material handling operations and stop worrying about price increases. You can insure your profit position by converting your unskilled labor into skilled labor and achieve mass production at low cost.

CLARK TRUCTRACTOR conducts surveys of material movements and recommends new methods and means to reduce production costs.

A copy of Clark's "Material Handling News" is yours for the asking.

Plan to visit our exhibit, National Material Handling Exposition, Cleveland, January 14 to 17, 1947.

CLARK TRUCTRACTOR
DIVISION OF CLARK EQUIPMENT COMPANY
BATTLE CREEK, MICHIGAN
OTHER PLANTS: BUCHANAN JACKSON BERRIEN SPRINGS MICHIGAN

Prices on CLARK products will not be advanced in excess of increased costs

Plan to visit our exhibit, National Material Handling Exposition, Cleveland, January 14 to 17, 1947.

CLARK TRUCTRACTOR
DIVISION OF CLARK EQUIPMENT COMPANY
BATTLE CREEK, MICHIGAN
OTHER PLANTS: BUCHANAN JACKSON BERRIEN SPRINGS MICHIGAN

Prices on CLARK products will not be advanced in excess of increased costs

When inquiring specify CP A5986 — see handy form pages 2-3

HUNDREDS OF INDUSTRIES *Depend on* **SPERRY FOR FILTRATION**

Almost all of today's complex manufacturing processes require filtration for separating solids and liquids, for clarifying, bleaching, thickening, purifying. Adhesives, alcoholic liquors, alkaloids, cosmetics, disinfectants, dyes, fuel oils, gums, inks, insecticides, paints, rayons, soaps, solvents, waxes — filtration plays an important part in the manufacturing of these and hundreds of other products.

And in the development of filtration equipment and filtration methods to meet all these varied needs, Sperry has played an important part. More and more manufacturers have been turning to Sperry, taking advantage of the specialized skill of Sperry engineers, of their wide experience in industrial filtration.

If you have a filtration problem, why not discuss it with our engineers? . . . there is no obligation.


D. R. SPERRY & CO., Batavia, Ill.

Filtration Engineers for Over 50 Years

*Eastern Sales Representative: Henry E. Jacoby, M. E.,
205 E. 42nd Street, New York 17. Phone: Murray Hill 4-3581*

*Western Sales Representative: B. M. Pilshay,
1033 Merchants Exchange Bldg., San Francisco 4, Calif. Phone: Do 0375*

When inquiring specify CP A5987 — see handy form pages 2-3



Specified for CATALYTIC SUPPORTS



ALUNDUM Granules, Pellets, Rings

Norton Company manufactures ALUNDUM catalyst supports in two grades of chemical purity (alumina 85%, alumina 77%) in the form of porous granules, pellets, and rings or tubular shapes. These are available in a wide range of sizes and can be made to fit the needs of the process under consideration.

NORTON COMPANY — Worcester 6, Mass.

NORTON REFRACTORIES

When inquiring specify CP A5988 — see handy form pages 2-3

New Literature

Window Units Prevent Guess-Work When Checking Oil Or Gear Mesh

Lubrication of machines and moving parts should not be left to "guess-work." For accurate checking of lubricant levels, flow or drip, and for observing position and movement of parts such as gear mesh and timing marks, self-contained window units are described in an illustrated, four-page bulletin. Pictures show units mounted on a large lathe, two windows indicating oil flow, two more indicating oil level. Other illustrations show oil level observation windows mounted on a power unit, a lubricator, and on hydraulic equipment, where high and low oil level are made visible. Installation, which involves driving or pressing units into reamed holes in the machine, is explained. A special assembly tool is offered for this purpose. Units are one-piece, chrome-plated steel with unbreakable plastic window held securely in place with oil-proof synthetic gasket. Manufacturer says plastic will not cloud up. Flush-mounted to machine surface. Complete diagrams. When writing, request Bulletin 4B.

BIJUR LUBRICATING CORPORATION,
Dept. CP, Long Island City 1, N. Y.

When inquiring specify CP A5989
— see handy form pages 2-3

Squirrel Cage Induction Motors Combine Safety With Output

Protection against industrial hazards plus extra capacity are stressed in a 12-page, illustrated bulletin describing construction, features and applications of a line of protected-type squirrel cage induction motors. Manufacturer says they are designed to carry 115% load continuously without injurious heating. Were used extensively in war plants. Text discusses insulation practice, mechanical details, testing facilities and procedures, test operation characteristics. Standard and special mountings, and three types of end frames, explained. These conform to NEMA standards. Other available types of mountings and modifications include shaftless motors, single bearing motors, vertical ring base mountings, frameless motors. Illustrated applications to sensitive drilling machines, pressure blowers, close-coupled hydraulic pumps, refrigeration compressors, vertical spindle surface grinders, portable clarifiers, multi-stage centrifugal pumps. A territorial map and list of service engineering offices are appended.

THE LOUIS ALLIS COMPANY, Dept. CP,
Milwaukee, Wis.

When inquiring specify CP A5990
— see handy form pages 2-3

ANOTHER DIVIDEND for PENNSYLVANIA SUGAR

PENNSYLVANIA SUGAR COMPANY
1037 NORTH DELAWARE AVENUE
PHILADELPHIA 25, PA.

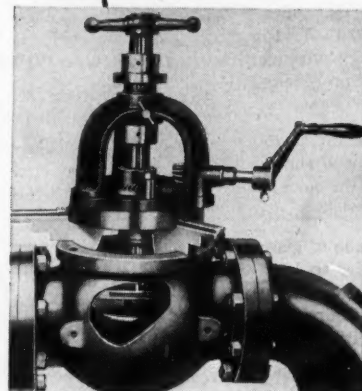
February 5th, 1946

Gentlemen:

No doubt you will be interested to know that the Dexter Valve Reseating Machine which we purchased from you seventeen years ago has reseated thousands of valves thru-out the plant ranging in sizes from 1" up to 16".

It is with pleasure I take this opportunity of advising you that this reseater has proven most satisfactory to us as a time and money saver.

Sincerely,
N. Smith
Plant Engineer



● The Dexter Machine is simple. With it, *one man* reseats worn and leaky valves right on the line. No removal, no replacement, and only a few minutes needed to do it. No matter where you use valves, you need Dexter Valve Reseating Machines and Cutters — the outfit that converts an expense into a paying investment. Send the coupon today.

Dexter Valve Reseating PAYS OFF!

Here is *absolute proof* of year after year savings from the use of Dexter Valve Reseating Machines. Long ago the small investment in Dexter equipment was paid off in valve expense saved, production time gained and headaches averted.

Now Pennsylvania Sugar Company actually chalks up a *profit* — a *dividend* — earned by the Dexter Machines it owns.

Read their letter — it presents facts vital to your maintenance budget.

Jobbers Wanted

**IF YOU CAN'T
SEND AN
ORDER
SEND YOUR
PROBLEM**

The Leavitt Machine Company
160 E. River Street
Orange, Mass.

Please send me your free new folder on "The Cost of Leaky Valves."

Name _____
Title _____
Firm _____
Address _____

THE LEAVITT MACHINE COMPANY • ORANGE, MASS.

**AUTOMATIC AIR SEPARATORS
DRAINS • LATHE CHUCKS**

Dexter VALVE RESEATING MACHINES

When inquiring specify CP A5991 — see handy form pages 2-3

These FIBERGLAS products have Chemical Industry Experience

Fiberglas, having a unique combination of chemical properties and physical characteristics, is widely used, in various forms, throughout the industry. Be sure to have complete information about these fibers of glass—indicate the number of the item in which you are interested and mail coupon today.

1 FIBERGLAS-BASE ELECTRICAL INSULATIONS withstand the effects of heat, moisture, most corrosive acids and vapors—have extra stamina that minimizes insulation failure due to overload and high ambient temperatures. There is a Fiberglas Electrical Insulation Material for virtually every need in motors, generators, other equipment.

2 FIBERGLAS THERMAL INSULATIONS offer exceptionally high efficiencies from 1000° F. to sub-zero temperatures. Types available for insulating pipes, boilers, ducts, ovens, tanks and other processing lines and equipment.

3 FILTER CLOTHS—inorganic, acid-resistant, heat-resistant, flexible fabrics woven from special chemically-resistant Fiberglas Yarns. Available in several widths and thicknesses.

4 FIBERGLAS TOWER PACKING—made of glass fibers bonded with a water soluble binder to form packs. The fibers are nonhygroscopic, unaffected by most acids, will not swell, rot or decay. Pressure drop very low, and loading and flooding velocities correspondingly high.

5 FIBERGLAS BASIC FIBERS in a range of specifications offer great possibility in the development of new and improved processes. For example, fibers having an average diameter of .00033" are being used for desalting petroleum.

6 "DUST-STOP" AIR FILTERS are replaceable type filters in which packs of adhesive-coated glass fibers serve as the filter medium. May be adapted to heating, ventilating or air-conditioning systems in banks to handle any cfm of air required. Highly efficient, yet low in initial and maintenance costs.

OWENS-CORNING
FIBERGLAS

Owens-Corning Fiberglas Corp.
Dept. 959
Toledo 1, Ohio

Send complete information on items _____

Name _____

Company _____

City _____ State _____

When inquiring specify CP A5992 — see handy form pages 2-3

New Literature

Explosives Cellulose and Rosins have Varied Uses

Cellulose chemistry has converted a waste product into something of value to the paint, varnish, lacquer, plastics, film, and allied industries. Ten forms of this cellulose are described. Neutral salts of processed rosins and resins contribute to today's better synthetic tires and are one of a line of chemical families discussed in this material booklet. In this rosin family are light and dark resins, commercial abediac acid free from oxidized rosin, a foundry mold spray, a low-cost thermoplastic stiffener, and the sodium soap of a dark resin that is used in weather resisting cements. Synthetic resins and ester gums are taken up next. These are high gloss producing liquid resins and tackifiers. The gums are suited to varnish and lacquer manufacture. Pentaerythritol esters, modified maleates and alkyd resins are offered in this group. Terpene hydrocarbons find many applications in textiles, essential oils, disinfectants, and oleoresinous finishes. Circus tents are made flame proof with chlorinated paraffin, and chlorinate rubbers make concrete paints of lasting beauty. Gelatin dynamites described are more water resistant than any other explosives that have been made to date. The company offers many different types of explosives for mining and industry. Special products include alums, casein, dimethyl and diethyl phthalate and a large number of insecticides. The booklet includes an industries served index. This literature is promptly available.

HERCULES POWDER COMPANY, Dept. CP, Wilmington 99, Del.

When inquiring specify CP A5993 — see handy form pages 2-3



JUSTRITE Safety-Approved Can Cuts Fire Hazards to a Minimum

Because they've proven themselves the ideal container for handling and storing flammable liquids, Justrite Gasoline Cans are standard equipment on many railroads. Justrite Gasoline Cans are sturdily constructed of heavily coated 24-gauge steel with high-gloss red enamel finish. Double seamed and soldered. Non-spill pouring lip. 7 sizes from 1 pt. to 5 gal. Convenient to fill, use and carry. Approved, inspected and individually numbered and labeled by Underwriters' Laboratories, Inc. Approved by the Associated Factory Mutual Fire Insurance Companies and so stamped.

See your supplier—today!

JUSTRITE MANUFACTURING COMPANY
2063 N. Southport Ave., Dept. B-5, Chicago 14, Ill.

JUSTRITE Safety

SAFETY CANS • OILY WASTE CANS
APPROVED SAFETY ELECTRIC LANTERNS

When inquiring specify CP A5994 — see handy form pages 2-3



Loading and transferring up to 800 lb. barrel or drum loads is NOW an easy job for ONE MAN. He simply runs the Sabin Truck up to container, slips hook on at top—then an easy pull on handle loads truck automatically. Roller bearings make travel easy. THIRD-WHEEL FEATURE insures better balance, enables loaded truck to stand alone.

Write for
BULLETIN
No. 45



The Sabin Machine Co., 6534 Carnegie Ave., Cleveland 3, O.

ALSO TOTE PAN, BOX, CARBOY, KEG TRUCKS!

When inquiring specify CP A5995 — see handy form pages 2-3

TIGHT VALVES FOR "TIGHT SPOTS"

in the process industries

Ordinary valves are in a "tight spot" when they are expected to remain tight in a corrosive fluid pipeline. But Alloyco Valves take severe conditions in their stride, functioning perfectly day-in and day-out for extraordinarily long periods. Made by pioneer specialists in all-stainless-alloy valves, Alloyco Valves are exceptionally long-lived and low in maintenance cost. Consult us on your requirements for valves in applications where resistance to corrosion and contamination are essential.



ALOYCO GATE NO. 111,
the leader of corrosion-resistant valves.

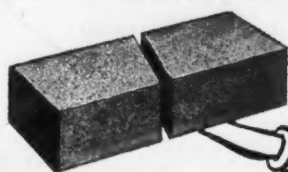


ALLOY STEEL PRODUCTS COMPANY, INC.
1302 WEST ELIZABETH AVENUE — LINDEN, NEW JERSEY

When inquiring specify CP A5996 — see handy form pages 2-3

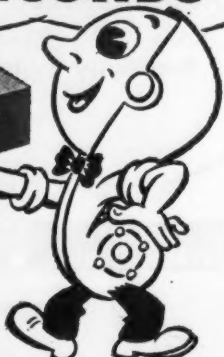
CHEMICAL REVIEW

CLIPPER MADE THIS CUT IN 29 SECONDS



NEWS FOR EVERY .. CHEMICAL PLANT

The new Clipper Multiple Cutting Principle makes possible faster cutting of every masonry material regardless of hardness.

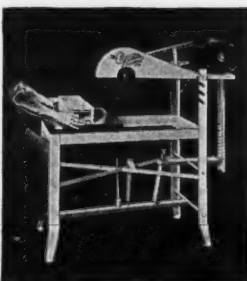


SPECIAL SIZES and SHAPES

You can cut Straights, Angles, Skews or Notches quickly and easily from Clay, Chrome, Silica, Magnesite, Acid Brick and other materials with Clipper Masonry Saws.

Saves Time—Better Workmanship.
CLIPPER MANUFACTURING COMPANY
2800 Warwick, Kansas City 9, Mo.

YOU CAN TRY A CLIPPER
FREE
WRITE FOR LITERATURE

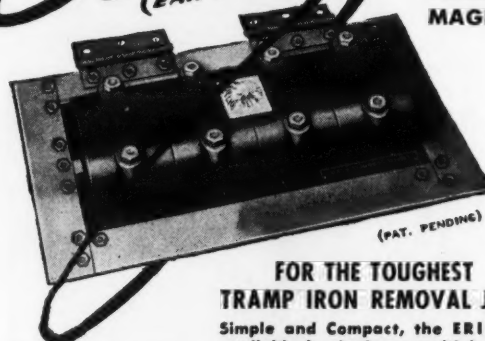


When inquiring specify CP A5997 — see handy form pages 2-3

Eriez

(EAR'EEZ)

NON-
ELECTRIC
PERMANENT
MAGNETS



FOR THE TOUGHEST TRAMP IRON REMOVAL JOBS

Simple and Compact, the ERIEZ is available in single or multiple row units to assure 100% separation of tramp iron from plastics, chemicals, coal, powders, fibers, liquids, pellets, etc. in process. Tell Us . . .

1. What You Process.
2. Depth and Speed of Flow.
3. Means of Conveyance.

We will recommend the correct ERIEZ Magnet combination for the job.

Drawing below illustrates
Penetration of
Eriez Magnetic Field.



WHEN IT'S MAGNETIC PROTECTION — SEE ERIEZ FIRST

ERIEZ MANUFACTURING COMPANY

16 East 12th Street • Erie, Pennsylvania

When inquiring specify CP A5998 — see handy form pages 2-3

New Literature

Pump Has Only One Stuffing Box

Medium-priced Economy pumps and pump units for cold, hot water or brine circulation, air conditioning and sprinkler systems, pressure boosting, washing machinery, boiler feeding and other uses are described in an illustrated, eight-page bulletin. Many applications for the brewing industry, food and other processing industries. Features include one stuffing box, simplified lubrication, tapped connection in pump cover stand for draining of packing gland seepage, above-the-floor motor stands, outboard an inboard bearings. Low cost and up-keep, long life, noiseless operation and occupation of small floor space are also cited. Presented in a manner to appeal to the maintenance man, text includes construction parts list, cross-sectional diagrams, complete selection tables and tabular outline dimensions. Write for Catalog No. D246.

ECONOMY PUMPS Inc., Dept. CP, Hamilton, O.

When inquiring specify CP A5999
— see handy form pages 2-3

★

Tells 20 Types of Heat Transfer Units and Their Uses

More than 20 types of heat transfer apparatus for all requirements are illustrated and described in a condensed, eight-page, self-indexed bulletin. Text covers evaporators, heaters, coolers, heat exchangers, finned-tube and bare-tube condensers. Construction features are discussed. Units illustrated and described include liquid heaters, water heaters, tubular heat exchangers, oil and solution heaters, oil and water coolers, reboilers, twin-bare tube sections, fin sections, tank heater, fin condensers, air and gas coolers, fin-fan heat exchangers, fin sections, bentube and cascade evaporators. Write for Bulletin No. 1261.

THE GRISCOM-RUSSELL CO., Dept. CP, Massillon, O.

When inquiring specify CP A6000
— see handy form pages 2-3

★

Electric Immersion Heater Is Automatic, Burnout-Proof

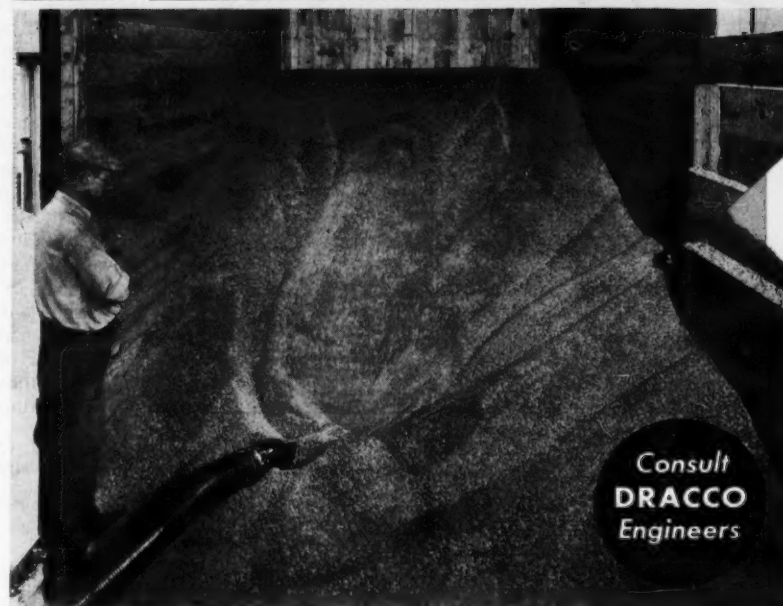
An "automatic safety" electric immersion heater with thermal link providing automatic temperature control; thermostat burnout protection and in-head thermo switch is described in pamphlet form. For all water tanks, stills, pipe lines. Write for Bulletin No. 2144.

AMERICAN INSTRUMENT CO., Dept. CP, Silver Spring, Md.

When inquiring specify CP A6001
— see handy form pages 2-3

LABOR
IS
SCARCE

...so why not let
DRACCO
PNEUMATIC CONVEYORS
MOVE YOUR MATERIALS



Consult
DRACCO
Engineers

DRACCO Pneumatic Conveyors move chemicals, grains and granular materials with a minimum of manual labor. In most installations ONE man and a DRACCO Pneumatic Conveyor replaces SEVERAL men. Wherever installed, DRACCO Pneumatic Conveyors handle materials more efficiently and cheaper . . . with fewer man hours. Why not let DRACCO Engineers check your present material handling methods with a view of recommending a BETTER method requiring LESS labor. They have over 30 years of experience in material handling.

For Further Information Write

DRACCO CORPORATION

4060 E. 116th St., Cleveland 5, Ohio New York Office: 130 W. 42nd St.

DUST CONTROL EQUIPMENT
PNEUMATIC CONVEYORS • METAL FABRICATION

When inquiring specify CP A6002 — see handy form pages 2-3

ARMSTRONG *industrial type* HUMIDIFIERS

*What
RELATIVE
HUMIDITY*

do you need?

DO YOU KNOW the numerous benefits that can be secured by maintaining proper relative humidity in processing plants during the winter heating season? "Prevention of loss of weight and deterioration of quality of hygroscopic materials" . . . "Control of dust and static electricity" . . . "Improvement of workability of materials" are just a few of the improvements cited. Ask for a copy of bulletin telling "What every production executive should know about humidification."

Armstrong builds a complete line of steam type humidifiers. Unit capable of handling as much as 40,000 cu. ft. of space lists for as little as \$100.00, complete with humidistat, solenoid control valve, fan, steam strainer, and drainage trap. For information, write to ARMSTRONG MACHINE WORKS, 881 Maple St., Three Rivers, Mich.

TYPICAL RECOMMENDATIONS

Explosives, Handling	55%
Sugar, Storage	35%
Yeast, Storage	60-75%
Chemical Storage, general	35-50%
Refractory Shapes, Drying	50-60%
Testing Laboratories	60-70%
Grain, Storage	30-45%
Paper Box, Storage	40-65%
Label Printing	45-60%
Rayon Spinning	85%
Ceramics, Molding	60%
Vatrooms, Fermenting	50%
Soap Drying	70%
Leather, Mulling	95%
Biological Products, Storage	60-65%

*Data on recommended temperatures on request.

ask for this bulletin

Now is the time to find out about the beneficial effects obtained by maintaining proper relative humidity during the winter heating season. Ask for a copy of Bulletin No. 158.



ARMSTRONG MACHINE WORKS
881 MAPLE STREET • THREE RIVERS, MICH.

When inquiring specify CP A6003 — see handy form pages 2-3

Now Literature

Continuous Blowoff System Pays Big Dividends In Boiler Plants

A correctly engineered continuous boiler blowoff system will pay for itself within six months to two years, according to this eight-page, illustrated booklet. Instance of a steam plant which saved \$30,000 annually in heat recovery with a \$4,500 installation is cited. Part one demonstrates by calculation and use of graphic chart how savings due to the use of continuous blowoff can be estimated. Reasons are cited for better boiler operation when using continuous blowoff system. Table of recommended limits in concentration of total solids in boiler water is included as is the calculation of water saved by continuous blowoff. Typical problems are worked. Part two contains the flash principle and its advantages, types of systems now in use and available to industry, features of application, and pointers on the selection of heat exchanger equipment. It is stated that practically no other piece of power plant equipment yields a greater return on an investment than a continuous blowoff system. It saves heat and insures smooth boiling conditions. A flow diagram of water conditioning equipment shows deaerating hot process softener, with boiler water recirculation to softener sedimentation tank for conservation of phosphate, chemical feeds, filters, phosphoric acid and sulphate feeds and unusual three stage flash system of continuous blowoff. Ask for reprint No. 45.

COCHRANE CORPORATION, Dept. CP, 17th & Allegheny Aves., Philadelphia, Pa.

When inquiring specify CP A6004 — see handy form pages 2-3

We've changed our name to

INDUSTRIAL OVENS, INC.

**but our basic principle
is the SAME —**

We've changed our name to Industrial Ovens, Inc. to define more clearly the scope of our service to industry. That service consists of the engineering, design and installation of systems and equipment for oven treating and processing operations.

As the Industrial Oven Engineering Company this organization has been responsible for increasing and speeding up production and lowering production costs in a wide range of industries—wire, rubber, textile, plastic, ceramic, metal finishing and many others.

If you have a production problem involving oven treating or processing, the engineered application of heat in continuous material-handling operations can help you—and that means Industrial Ovens, Inc. can help you. Write today for literature describing IOI installations in your field.



**INDUSTRIAL
OVENS, INC.**

13825 TRISKETT ROAD
CLEVELAND 11, OHIO

ASSOCIATED COMPANY: JAMES DAY MACHINERY LTD., LONDON W1, ENGLAND

When inquiring specify CP A6005 — see handy form pages 2-3

CARDOX

**Has Broadened the Scope of
CO₂ FIRE PROTECTION
for Many Types of Hazards**

**AIRPORT
CRASH-FIRE TRUCK**

FIRE TRUCK

FIXED SYSTEMS

Write for Bulletin 16116

CARDOX CORPORATION
Bell Building Chicago 1, Illinois

When inquiring specify CP A6006 — see handy form pages 2-3

IMMEDIATE DELIVERY



BUFFALO HAMMER MILLS

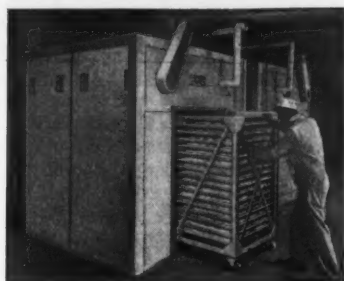
Used for
GRINDING
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in practically every
industry.

Flexible welded design permits fast delivery of Buffalo Hammer Mills as well as an unlimited number of models for special and standard application, — lab models, too. Capacities 1/2 to 200 H.P.

Write today for CATALOG and PRICES.

**BUFFALO HAMMER MILL
CORPORATION**
23 WASHINGTON ST., BUFFALO 3, N. Y.
Manufacturers of Hammer Mills Exclusively Since 1928

When inquiring specify CP A6007 — see handy form pages 2-3



"NATIONAL" TRUCK TYPE TRAY DRYER

For batch drying of various chemicals in moderate quantities. Designed to accommodate one or more trucks carrying any desired number of trays. Recirculating system carries heated air to each tray space in sufficient volume and with proper velocity to assure uniform drying of each tray load without dusting. May be steam, gas or electric heated. Illustrated: "NATIONAL" Truck Type Tray Dryer in one of the plants of Foote Mineral Co. Similar installations in other well-known chemical plants prove the sound design and careful engineering of this dryer.

Send for Illustrated Folder

Chemical Dryers of
All Types and Sizes



Special Drying and
Heating Equipment

THE NATIONAL DRYING MACHINERY CO.
2709 N. HANCOCK STREET • PHILADELPHIA 33, PA.

When inquiring specify CP A6008 — see handy form pages 2-3

New Literature

Ammonia, Oil and Freon Gauges

Pressure and indicating gauges, their dimensions and structural features, are theme of an eight-page, illustrated catalog. Uses include hydraulic gauges for high pressures on cotton mill machinery and diesel engines; duplex gauges for indicating two pressures on one dial, as in air brake systems, water softeners and filters; gauges for ammonia apparatus and chemical equipment requiring steel internal construction; gauges for use with freon, sulphur dioxide, methyl chloride or any refrigerant that will not corrode bronze. Altitude, compound, naval, recording and vacuum gauges also included. Tables show graduations and pound intervals. Illustrations of operating parts and front dials. Case and mounting information, with drawings. Structural features enumerated. This is the third of recent catalog issues, others featuring indicating, remote reading and etched stem thermometers and hydrometers. Literature mailed on request.

GOTHAM INSTRUMENT CO., Inc., Dept.
CP, 149 Wooster St., New York 12, N. Y.

When inquiring specify CP A6010
— see handy form pages 2-3

★

Long-wearing Soytex Filters Repel Mildew, Corrosion

Superintendents, foremen, chemical engineers and executives in food and chemical processing and refining will be interested in this four-page pamphlet describing Soytex scientific filters for improved production of vegetable oils and animal fats from cracklings, soya beans, oleaginous nuts and seeds. Text describes Soytex as a close woven fabric with fibres completely enclosed in smooth, glassy surface. Mildew-repellant, corrosive-resistant. Users are said to report increased volume; better quality product; easy, quick cake release; less laundering and shutdown time, lower annual cloth costs. Workmanship and materials described, also pre-shrunk treatment which insures permanent fit, easy installation and removal. This involves natural, slow drying process. Each cloth cut and sewed to fit individual presses. Raw edges are overcast to prevent fraying, and feed holes are stitched and reinforced to prevent cloth weakness at this critical point. Special filters for ceramics, paints and varnishes, chemicals, lard and animal oils, food products, soap and other uses are listed. Greatly outlasts ordinary grey duck. Write for literature.

FILTER FABRICS, Dept. CP, 1255 W.
4th St., Cleveland 13, O.

When inquiring specify CP A6011
— see handy form pages 2-3

Newark

"END-SHAK"

TESTING SIEVE SHAKER



Bring your laboratory and plant operating results into closer relationship by applying the same fundamental principle of screening to both.

With "END-SHAK" the sieves are given an ideally combined reciprocating and turning motion which causes the sample to spread uniformly over the sieve area eliminating jumping and bouncing of the particles. Operation is smooth and with all working parts submerged in oil, noise and wear are reduced to a minimum.

Write us for additional data on this efficient test shaker.


NOTE: We have a service now for re-covering Testing Sieve Frames at nominal cost. Don't throw away frames with worn cloth. Write us.

NEWARK
for ACCURACY

Newark Wire Cloth
336 Verona Ave., Newark 4, N. J. **COMPANY**

11-NWC-3

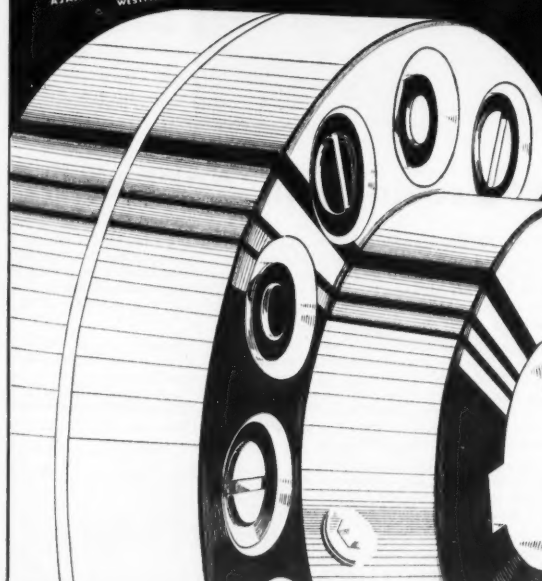
When inquiring specify CP A6012 — see handy form pages 2-3



FLEXIBLE COUPLINGS

Safeguard your direct-connected machines against
unavoidable misalignment with the positive, resilient
drive of Ajax Flexible Couplings.
Write for Data Book.

AJAX FLEXIBLE COUPLING CO. INC.
WESTFIELD, N. Y.

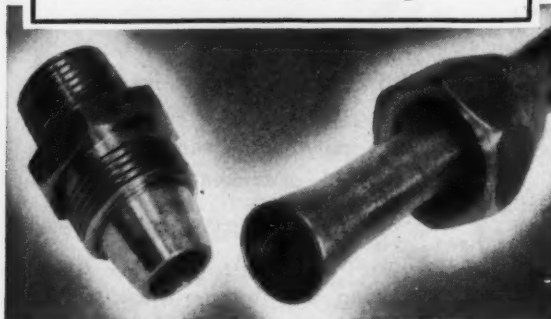


When inquiring specify CP A6009 — see handy form pages 2-3

VIBRATION TEST

by Hydraulic Equipment Manufacturer

Wins Approval
for **SUPERSEAL**
Flared Tube Fittings



Unretouched photo of fittings and tubing after test.

"After 2,000,000 vibrations . . . 1/4" throw, 1800 vibrations per minute, 2000 pounds pressure . . . SUPERSEAL fittings were still in perfect condition. There was no leakage or tendency of tube seats to break down."

Superseal Assures You...

★ Easier flaring of tubing especially in large sizes.

★ Leakproof joints even under maximum vibration and pressure.

★ Repeated disconnections without injury to tubing.

Features

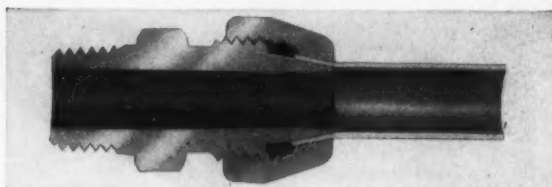
Long, smooth, tapered, 10° flare on SUPERSEAL fitting and corresponding flare on inside of self-aligning nut holds tubing securely in place. Materials . . . stocked in steel. Malleable iron, brass, aluminum or alloys on special order. No shearing action to injure

the tubing at the point of flare when the nut is tightened—instead, the tubing is actually strengthened.

Two-part fitting . . . no rings, no sleeves.

Tubing bends can be made close to fitting.

Approved by Underwriters' Laboratories for all hazardous gases and liquids



GRINNELL COMPANY, INC.

Executive Offices:
Providence 1, R. I.

Branch Warehouses
in principal cities.

GRINNELL

WHENEVER PIPING IS INVOLVED

When inquiring specify CP A6013 — see handy form pages 2-3

Equipment for Production

Laboratory Units Provide Processing and Testing Temperatures to 100° F.

Proves products subject to severe weather conditions

Uses — These units provide controlled temperature, altitude and relative humidity over a wide range of operations.

Features — Sufficient air circulation is provided at all times to insure maximum uniformity in the working space. Effects of treatment on the material may be noted during processing or testing through the inspection window mounted in the door of the chamber. In the chamber, temperature, altitude and relative humidity can be separately varied with associated equipment.

Description — Temperature range is from minus 100° F. to plus 180° F. Units are available in capacities of 1-5-8-18-27 cu. ft. Each basic model has the same temperature range. Also a model is available for the low temperature of minus 76° F. All outside surfaces are furnished in standard grey baked enamel. Other colors can be supplied on request. Electronic recorders, programmers, manometers, and other special instrumentation may be obtained at additional cost. Descriptive literature may be had.

BOWSER INCORPORATED, Dept. CP, Terryville, Conn.

When inquiring specify CP A6014 — see handy form pages 2-3

★

Dual-Purpose Generator Does Both Induction and Dielectric Heating

Interchangeable oscillator sections make unit adaptable for metal, non-metal heating



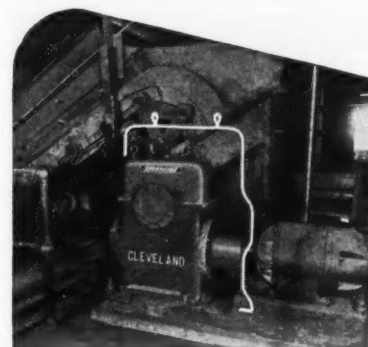
Electronic heating generator unit, it efficiently heats non-conducting materials. Textile processing, wood gluing and laminating, dehydration of

Uses — Designed to fill the need of laboratories for rapid, dependable source of heat for wide variety of heat applications, this "Thermonic" electronic heating generator is a single, dual-purpose unit suitable both for induction (metal) and dielectric (non-metal) heating operations. As an induction heating unit, it is suitable for thin case-hardening, heat treating through hardening for metallurgical processing, brazing, forging, melting and soft soldering. As a dielectric heating

foods, preheating and polymerizing of plastics, sterilization and deinfestation of packaged foods, rubber curing and foundry core baking are a few applications of this unit. In petroleum laboratories, unit is useful for removing water from oil-water emulsions without raising oil temperature excessively, while in chemical laboratories dielectric heating will evaporate liquids such as drugs, chemical solutions and fruit juices. Also for treating, drying and processing of leather, paper, tobacco, drugs, cork, ink and ceramics. Designed especially for experimental laboratories, testing depots and development research departments.

Features — Interchangeable oscillator sections, one for induction, the other for dielectric heating. Changeover is simple, accomplished by removing one oscillator section, replacing it with the other. Flexibility of application makes this unit useful in metallurgical laboratories. Rapid, uniform heat for producing desired chemical reactions can be accomplished.

Description — Thermonic M-285C electronic heating generator. Induction oscillator feeds into a radio-frequency output transformer; dielectric oscillator feeds through coaxial cables to heating electrodes. High-frequency generator operating on 205-245 volts, 60-cycle, single-phase power supply having full-load input of 12 KVA at 90% power factor. Full-load output: 285 BTU per min., or approximately 5 KW at nominal frequencies of 375,000



As the white outline indicates, a standard unit of nearly twice the frame size would be required to do the work of Speedaire.

\$330 saving with **SPEEDAIRE**

In this Michigan chemical plant, Speedaire is doing a highly satisfactory job on pan conveyors handling limestone. Reducers run cool under heavy loads, unaffected by the lime dust. Their compactness permitted a closer hook-up between machines and motors, saving valuable floor space. And compared to conventional worm-gear reducers, Speedaire saved the company \$330 per unit installed.

Speedaire is Cleveland's new fan-cooled worm-gear speed reducer. Because it is fan-cooled, Speedaire will do more work—will deliver up to double the horsepower of standard worm units of equal frame size, at usual motor speeds. It can be installed economically on many applications where other types have been used heretofore—giving you the advantages of a compact right-angle drive. Speedaire gives the same long, trouble-free service characteristic of all Clevelands.

For full description, send for Catalog 300. The Cleveland Worm & Gear Company, 3257 East 80th St., Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers Ltd.



When inquiring specify CP A6015 — see handy form pages 2-3

Production

cycles per sec. for induction heating operation, 20,000,000 cycles per second for dielectric heating. Tube complement of this unit comprises two mercury-vapor rectifiers and one water-cooled oscillator. Generator weighs 1400 lbs., is 36" wide, 28" deep, 62 1/8" high.

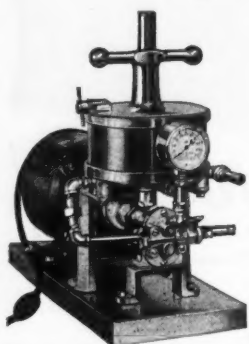
INDUCTION HEATING CORPORATION, Dept. CP,
389 Lafayette St., New York 3, N. Y.

When inquiring specify CP A6016 — see handy form pages 2-3

★

Sealed Disc, Bench-Type Filter Handles 1 to 6 Gals. Per Min.

*Filtration capacity 40 to 1200 sq. in.; for pilot-plant,
light manufacturing*



Sealed disc bench-type filter

Uses — Sealed disc, bench-type filter designed especially for light manufacturing or pilot-plant work. Other models range from small laboratory-type to largest production units. For general batch filtration work on chemicals, plating solutions, liquid soap, liquid plastics, drugs, extracts, alcohol, syrups, acids, perfumes and water.

Features — Outstanding feature of bench-type model is its large filtering capacity. Arrangement of filter discs gives

greatest possible filtration area in smallest space. Highly compact. Asbestos discs in eight grades for coarse or ultra-fine work. Filter is completely enclosed, preventing loss of liquid by dripping or evaporation. When handle on top is removed, entire filter can be taken apart for easy cleaning. Capacities: 1 to 6 gals. per min. Filtration areas: 40 to 1200 square inches. If liquid contains abrasives, carbon, filter aids or acids, Alsop Centri-poise pump can be used, and all parts touching liquid can be made of stainless steel, monel metal, bronze, iron, etc. Advantages of "Hy-Speed" Sealed Disc filters: inexpensive, disposable filter cloths or bags mean no washing; generally, there is no need to build filter cake, since provision is made for special mediums; no loss of solution, as filters are said to be leak, drip, vapor-proof; simple operation eliminates need for skilled operators.

Description — Bench-type has positive pressure rotary pump. Liquid enters filter from pump or pressure line, fills cylinder and passes through holes in each of the sludge rings. Half the liquid in each ring is forced through disc beneath it, other half through disc above. Sludge or sediment remains in ring. Filtered liquid from discs directly enters perforated screen next to it, running through channels in screen to common outlet screen in center. Each disc acts as separate, individual filter. Large volume model for ultra-fine filtration with 30 discs has 3000 sq. in. filtration surface. Catalog No. 745, describing filters, sludge-collecting rings, filter discs, "Disc-Pak" filters, large capacity units, "Hy-Speed" and built-in mixers, complete mixing tanks and glass-lined storage tanks sent on request.

ALSOP ENGINEERING CORPORATION, Dept. CP,
Milldale, Conn.

When inquiring specify CP A6017 — see handy form pages 2-3

**Anti-Corrosive
STAINLESS STEEL
fastenings**



This is one corner of our stock room, where we carry a wide assortment of Stainless Steel Fastenings in all standard sizes and analyses. That's why we can give you prompt service on almost every order.

But this is only a part of the whole picture. We're pioneers in the manufacturing of Stainless Steel Fastenings. Our stockpile of raw materials is large, and we can produce the Fastenings you require, to your specifications, quickly and accurately.

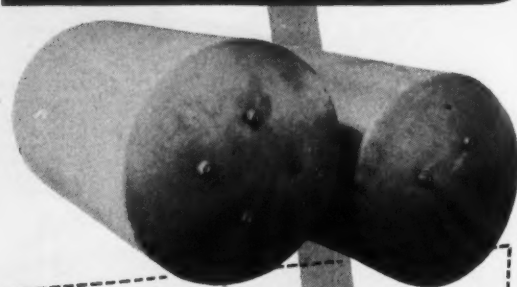
Nuts, bolts, machine and wood screws, rivets, cotter pins, nails, washers, welded and seamless pipe, pipe fittings — all STAINLESS STEEL! Over 100 items — over 7,000 sizes! Write for our catalog and stock list, or let us quote you without obligation on your needs. Address Anti-Corrosive Metal Products Co., Inc., 52 River Road, Castleton-on-Hudson, N. Y.



Anti-Corrosive Metal Products Co. Inc.
CASTLETON-ON-HUDSON NEW YORK

When inquiring specify CP A6018 . . . see information request blank, pgs. 2-3

IDENTICAL *Twins*



MADE FROM
JESSOP STAINLESS
STEEL

IDENTICAL IN
Appearance AND Performance

These two pressure vessels, 5 feet in diameter, 8 feet long, are 80% receivers for use in the chemical industry. Not only are they identical in appearance, but they are also identical in corrosion resistance and in physical properties. For these vessels are made from JESSOP Stainless Steel, a practical guarantee of uniform performance both in fabrication and in service.

The Type 347 stainless steel used for this particular application is an 18-8 alloy to which columbium has been added to eliminate sensitivity to intergranular corrosion. This type steel is ideal for use where severe specifications must be met; however, other analyses of stainless steel would perform satisfactorily where the requirements are less exacting. JESSOP makes all types of stainless and heat resisting steels and will advise which type will meet your specifications most economically. Write in full describing the application.

JESSOP STAINLESS STEELS

are supplied in:
Bars • Sheets • Strip
Plates • Castings
Solid and Composite Sheets
and Plates
Flanged and Dished Heads



JESSOP STEEL CO.

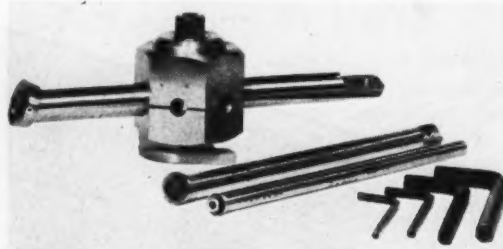
Washington, Pa.

When inquiring specify CP A6019 — see handy form pages 2-3

Production

Rotating Circular Cutter Bit Has 20 to 50 Cutting Edges

*Combination boring, cutting and facing tool
requires fewer production stoppages*



Rotating Cutter Bit

Uses — "Shearcutter" boring, turning and facing tool for use on lathes, screw machines, drill presses, boring machines.

Features — 20 to 50 new cutting edges are available simply by rotating the circular cutter bit, thus eliminating frequent production stoppages to resharpen cutting tool. Penetration angle permits knife-like shearing action and mirror-like finishes which greatly reduce necessity for grinding, filing, reaming or polishing to remove tool marks. Prolonged cutting edges due to sharpening action of chips sliding back over blade edges. Shearing action reduces heat of friction. Circular bit easily removed, quickly resharpened when necessary. Scientifically preformed for optimum cutting: no worry about proper rake angles. Fast production and turning speeds. Cutter bit is fastened securely to end of specially designed holder. Offered complete with three bit holders, six bits and toolmaker's precision boring tool holder with bored and reamed holes for bars.

Description — By loosening one screw and rotating bit a fraction of an inch, new cutting edge is available.

FEARLESS TOOL CO., Dept. CP, 1234 S. Gramercy Pl., Los Angeles 6, Calif.

When inquiring specify CP A6020 — see handy form pages 2-3

★

Metal Degreaser Offers Choice Of Cleaning Operations

*Up to 180 baskets cleaned per hour in eight
different sizes*

Uses — For the degreasing of small basketed parts.

Features — Three cycles of operation are offered. In the first, the work being cleaned is dipped in hot solvent in the first chamber and then removed through vapor in the second. Another cycle is that in which the solvent level is held low in the first chamber allowing the accumulation of oils and grease as in a one dip concentrator. The conveyor moves through hot solvent in the second chamber and then through solvent vapors in the final phase. In the third method, the work is cleaned in solvent at a boil temperature, at a rinse temperature and in the vapor. Some contaminants can be removed in the vapor alone.

Description — This degreasing unit is fabricated from 10-gauge steel plate, reinforced with structural steel of all

the New **A-2**

FOR FASTER STRAPPING



Signode's new A-2 Seal-Feed Strapping Machine tensions, cuts, seals in quick, easy motions. One tool does all. It is lightweight, compact and outstanding for fast, low-cost strapping ... particularly on centralized or conveyor systems. **WRITE TODAY** for complete details and demonstration in your own plant.

Use Signode Steel Strapping for added protection in shipping cartons, boxes, crates, skids, pallets...and also for carloading.

SIGNODE STEEL STRAPPING CO.
2650 N. Western Avenue,
Chicago 47, Illinois
391 Furman St., Brooklyn 2, N. Y.
477 Bryant St., San Francisco 7, Calif.

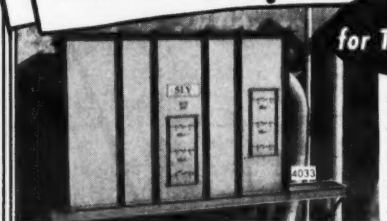
SIGNODE
STEEL STRAPPING

When inquiring specify CP A6021 — see handy form pages 2-3

SLY DUST Collectors

Inexpensive to Install and Maintain

*Pay
for Themselves*



A typical SLY Dust Collector inside building with hopper discharge through floor. This filter collects the dust from grain handling equipment. Similar installations collect alfalfa meal.

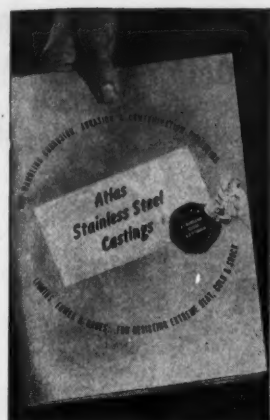
SLY Dust Control Systems save thousands of dollars yearly in plant maintenance and improved production, in the recovery of valuable materials—in various kinds of manufacturing operations such as crushing, grinding, conveying, loading, separating, and other operations. They are inexpensive to maintain and often repay their cost in a comparatively short time. Ask for Bulletin 98 and tell us your problem.

5 SLY
Superiorities

1. Greater filtering capacity — 2. Taut bags for better dust removal — 3. Bags more easily replaced — 4. Automatic control — 5. Simpler shaker mechanism saving operating and maintenance costs.

SLY THE W. W. SLY MFG. CO.
4754 Train Ave., Cleveland 2, Ohio

When inquiring specify CP A6022 — see handy form pages 2-3



8 pages of Interesting Data for users of ALLOY CASTINGS

This new 8 page bulletin contains two full pages on physical properties of the various alloys. Illustrations and helpful information. Please ask for bulletin 45 when writing.



ATLAS STAINLESS STEEL CASTING DIVISION

ATLAS FOUNDRY COMPANY

525 LYONS AVENUE

IRVINGTON 11, N. J.

When inquiring specify CP A6023 — see handy form pages 2-3

For Heavy Duty Chemical Packaging . . .



Accurate weights are just as important in the big bag or carton as in the small package. The fact that your losses can be heavier in the large package with the wrong scale is the only difference. Ounce accuracy in the heavy bag or carton is not theory . . . it's a reality in the new EXACT WEIGHT Scale Model No. 1120 (illustrated). Production men all over the country have ordered several more of these scales after trying the first one. They say generally it is the best piece of weighing equipment they have ever used in chemical packaging in the heavy duty class. We believe you will agree with them after you too have used this superior piece of equipment. Write for details today!

INDUSTRIAL PRECISION
Exact Weight Scales

THE EXACT WEIGHT SCALE COMPANY

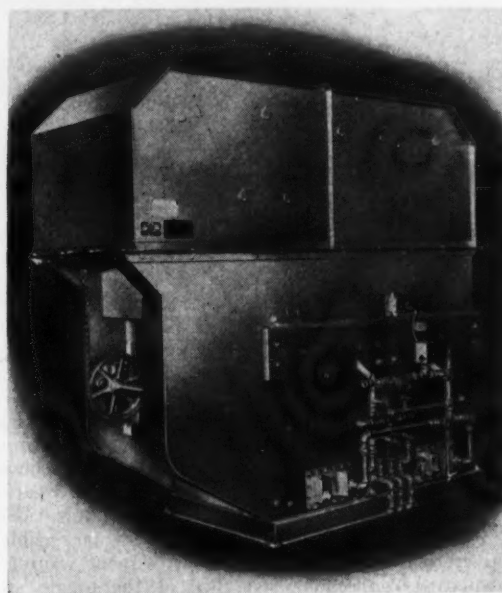
31 W. FIFTH AVE.,
Dept. E, 783 YONGE ST.

COLUMBUS 8, OHIO
Toronto 5, Canada

When inquiring specify CP A6024 — see handy form pages 2-3

Production

welded construction. A water jacket condenser, tested for a working pressure of 40 pounds per square inch completely circles the machine. Beneath the condenser is a



Degreaser provides three operating cycles

clean solvent collecting trough which carries the reclaimed solvent through a water separator to either the storage tank or the second chamber. The work to be cleaned is loaded at one end of the degreaser and carried through the cleaning cycle returning through the upper hood to the same end of the machine for unloading. The conveyor system is complete with the necessary sprockets, shafts, take up device, speed reducer and vari-speed drive. All of the sprockets below the vapor line are zinc plated as are all of the cross rods and all of the conveyor chain. Hourly work load capacities are from 2000 to 4000 pounds and eight sizes of baskets may be incorporated from 8 x 18 x 6 inches to 18 x 36 x 12 inches. Up to 180 baskets of parts may be cleaned per hour. Degreasers are available either zinc spray coated or with alloy-steel clad interior surfaces. Literature presents complete facts on this equipment.

DETREX CORPORATION, Dept. CP, Detroit, Mich.

When inquiring specify CP A6025 — see handy form pages 2-3

Mechanical Goggle Valves Reduce Industrial Hazard

Diagrams and dimensional data on mechanical goggle valves for gas washers, precipitators, blast furnace gas mains, and boiler, coke, chemical and metallurgical plants are provided in a six page, illustrated folder. Described as a positive shut-off valve providing added safety for workmen. Dimensions (6" to 72") appear in chart form beneath detailed drawings. Construction, installation and valve-to-goggle plate clamping method fully described. To free goggle plate, clamping yoke is pressed against lugs on clamping ring by means of screw-and-lever mechanism. To clamp goggle plate, yoke is pressed against lugs. Valve seats remain parallel at all times. Write for bulletin.

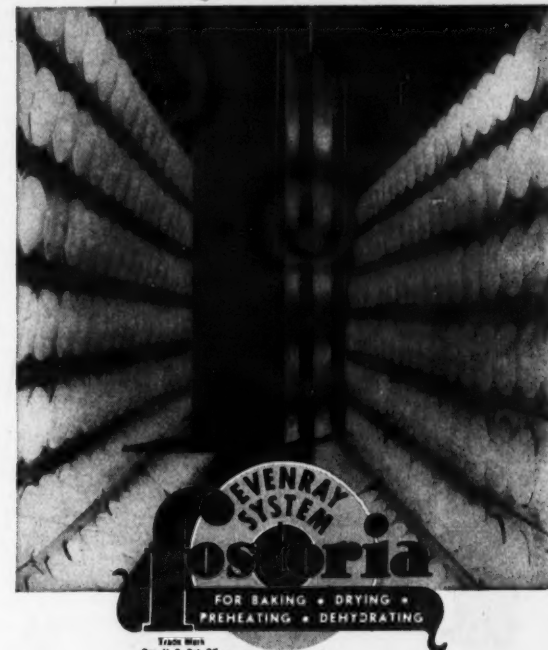
WILLIAM M. BAILEY COMPANY, Dept. CP, Pittsburgh, Pa.

When inquiring specify CP A6026 — see handy form pages 2-3

INFRARED Means Production Savings

Typical Example
**90% SAVING
IN TIME**

A steel cabinet manufacturer cut finish baking time to 8 MINUTES from a previous 80 minute time range. The Fostoria EVENRAY System gave him this faster, more economical production and reduced rejects.



THE CHOICE OF MORE THAN 4,000 MANUFACTURERS
IN THIS COUNTRY AND ABROAD

Because-

- 1 Evenray models utilized GOLD on all oven interiors for maximum efficiency. Gold is the best reflector of infrared rays—98% efficient.
- 2 Evenray's 2-wall construction, in conjunction with GOLD interiors provides double insulation against heat losses.
- 3 Evenray's FIRST COST is economical because component parts of each customer made system are manufactured on mass-production basis.
- 4 Evenray Systems are designed to accommodate all clear and reflector type infrared lamps available today—up to and including 1000 watts.
- 5 Evenray Systems are flexible—can be added to or altered quickly and easily. They can be suspended from ceiling, and made to fit current production lines.
- 6 Evenray Systems are listed under Re-examination Service of Underwriters' Laboratories.

Write For Literature A brochure EV-1245 describes EVENRAY SYSTEMS and shows typical installation photos. Portable equipment catalogs also available.

THE FOSTORIA PRESSED STEEL CORP.

FOSTORIA, OHIO

Export Sales Department, 401 Broadway, New York City, U. S. A.

When inquiring specify CP A6027 — see handy form pages 2-3

**CASE HISTORY OF
ANOTHER CHEMICAL
PROBLEM SOLVED
BY — THE "N.F.E."***

One of the world's largest chemical corporations had this PROBLEM: to remove crystalline inorganic salts from water soluble phenolic resin having a viscosity of 100cp at 110 C. An important factor in this filtration problem was that the inoperative "down-time" could not exceed 30 minutes. 30 minutes — that was all allotted for emptying the filter, discharging the cake, refilling the filter, and precoating!

**NIAGARA FILTER ENGINEERS
solved both problems!**



A #45 Niagara Filter with all metal — steam jacketed for 25 lbs. psi — with a clean-out door — was designed, constructed, and installed and operated under the direction of the "N.F.E."

Here's what the plant engineer wrote:

"We wish to report that operation of this filter is quite satisfactory. No discernable deterioration of the Monel screens has occurred, and although they have been washed with hot water many times since their installation.

"It is not our policy to give a written testimonial of any kind to an equipment manufacturer but as this was a somewhat unusual installation, we feel that you are entitled to know the results.

We are satisfied with the results we obtain in the clarification of our resins using this filter and the proper precoat. Be assured that you will be given every opportunity to furnish us with similar equipment in the future."

IF IT CALLS FOR FILTRATION call for an "N.F.E."... the complete engineering service from laboratory appraisal of the filtration characteristics of your product, to producing the daily production requirements of your plant — at the lowest economical operating costs is available to you... at no obligation.

*"N.F.E." — Niagara Filtration Engineer — a trained graduate engineer with years of actual field experience in chemical, food, fermentation and process industry filtration problems. Niagara Filter has a staff of "N.F.E.s" available to assist you without cost or obligation.

niagara filter CORPORATION
3080 MAIN ST. BUFFALO 14, N. Y.
IN CANADA... NIAGARA FILTER CORP. (CANADA) LTD.

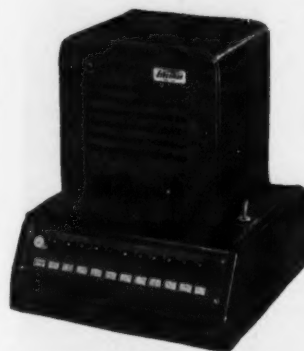
FILTRATION ENGINEERS TO THE PROCESSING INDUSTRIES

When inquiring specify CP A6028 — see handy form pages 2-3

Production

**Electronic Intercom Unit Handles
6 Private, Two-Way
Conversations**

*Remote control permits receiving calls and replying
from across the room*

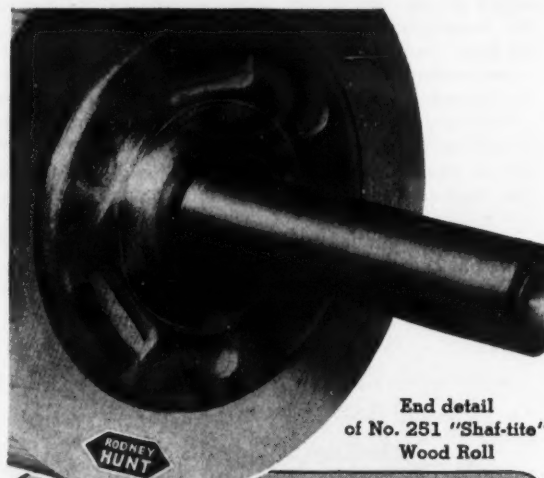


Electronic, remote-operating
intercom unit

Uses — Executive intercom station for private, two-way voice communication with any combination of 11 other stations. (12 stations, in all).

Features — As many as six independent, two-way conversations are possible at the same time, since any two stations in the system can carry on simultaneous private conversations. Convenient push-buttons identify each station, enable ex-

ecutives to originate calls selectively without waiting for switchboard connections. A flick of the toggle switch makes it possible to receive calls and reply remotely from across the room, without approaching unit to depress talk key. Users of remote or trumpet-type staff stations can re-



End detail
of No. 251 "Shaf-tite"
Wood Roll

**"SHAF-TITE" ROLLS solve
many roll problems!**

The exclusive "Shaf-tite" end construction, strongest wood rolls, plus longer life and lower cost are all features of Rodney Hunt "Shaf-tite" Rolls that insure the solution of many industrial roll problems. Send for catalogue today.

RODNEY HUNT MACHINE CO.

273 Maple Street, Orange, Mass.

When inquiring specify CP A6029 — see handy form pages 2-3

**WHEN THE MEN IN YOUR SHIPPING
DEPARTMENT GO HOME, ARE THEY**



With adequate Ironbound materials handling semi-live skids, skid platforms and floor trucks, your shipping personnel will be less tired after a full day's work and better able to fulfill the following day's handling... your unit handling cost will be greatly reduced, too!

Our engineers are able to cope with all handling problems—whether they be at the manufacturing end or the shipping end of your production.

Write for Bulletin 40

IRONBOUND BOX & LUMBER CO., 60 Hoffman Place, HILLSIDE, N. J.

**Ironbound MATERIALS
HANDLING
DIVISION**



When inquiring specify CP A6030 — see handy form pages 2-3

**Genuine
Basco-TEX PLASTIC APRONS**

**DEFINITE PROTECTION
against oil, acid, water,
alkalies**
Will not crack or peel
**No Laundering—just
wipe off with damp cloth**

**20-MILL PLASTIC
10 Times Stronger
than cloth**
**Costs Only 1 cent
About 1 a day**



Free Sample Swatch on Request
ASSOCIATED BAG & APRON CO.
220 W. Ontario St., Chicago 10, Ill.
SUPERIOR 5809

PRICES	SIZES	COLORS
WHITE—4 Mill Plastic		
27 x 36	\$6.62 per doz.
30 x 36	7.53 per doz.
36 x 40	7.96 per doz.
36 x 44	8.85 per doz.
Full Length Sleeves 6.00 per doz. pr.		
BLACK or WHITE—8 Mill Plastic		
27 x 36	\$8.17 per doz.
30 x 36	8.87 per doz.
36 x 40	10.10 per doz.
36 x 44	12.38 per doz.
Full Length Sleeves 9.66 per doz. pr.		
Leggings, Hip Length		
..... \$11.90 per dozen pair		
BLACK—12 Mill Plastic		
27 x 36	\$9.31 per doz.
30 x 36	10.15 per doz.
36 x 40	12.95 per doz.
36 x 44	14.35 per doz.
MARON or BLACK Heavy Double-Coated Neoprene		
27 x 36	\$12.90 per doz.
30 x 36	14.00 per doz.
36 x 40	18.33 per doz.
36 x 44	20.50 per doz.
Full Length Sleeves		
..... 12.90 per dozen pair		
Leggings, Hip Length		
..... 23.50 per dozen pair		
BLACK or WHITE—Extra Heavy		
20 Mill Plastic		
27 x 36	\$12.90 per doz.
30 x 36	14.00 per doz.
36 x 40	18.33 per doz.
36 x 44	20.50 per doz.
Full Length Sleeves		
..... 12.90 per dozen pair		
Leggings, Hip Length		
..... 23.50 per dozen pair		

All Prices F.O.B. Chicago.
Minimum order 1 dozen
ORDER BY PHONE OR MAIL

When inquiring specify CP A6031 — see handy form pages 2-3

ply remotely without leaving their work. Variable volume control provides adjustable power-output, covering noise level areas such as stockrooms, loading platforms, production areas. Patented audio-amplifier circuit, alnico speaker, lifetime neon pilot lamp, vinylite insulated moisture-proof interior wiring. Automatic light signals when station called is busy.

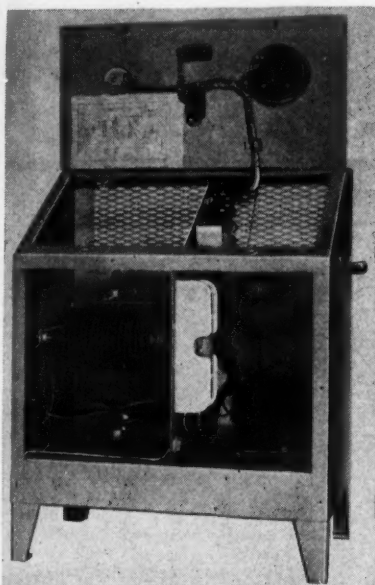
Description — Model 1100. Hand-rubbed walnut cabinet. Harmonizing plastic controls and bronze escutcheon. Unit is 10 1/2" high, 9 1/2" wide, 9" deep.

EXECUTONE, Inc., Dept. CP, 415 Lexington Ave., New York 17, N. Y.

When inquiring specify CP A6032 — see handy form pages 2-3

Charger Eliminates Central Charging Area

Selenium Charger Services Small Electric Trucks



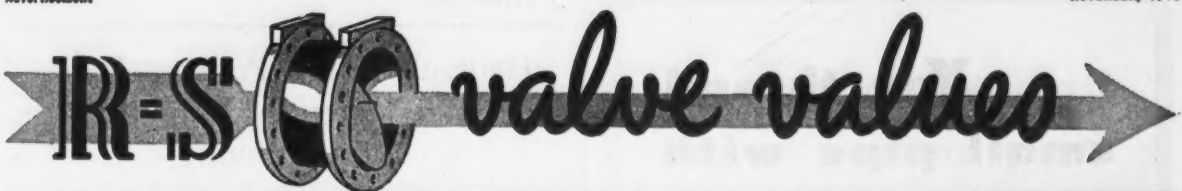
On-the-Spot Battery Charger

ing in and setting the time clock. The clock regulates the time of the charge and automatically terminates the charge. Battery temperature well below the manufacturer's maximum is maintained throughout the charging period, prolonging the battery life.

Description — Chargers are available for operation from three standard A. C. lines — 110-115 volt 60 cycle single phase, 220-230 volt 60 cycle single phase, and 110-115 volt 25 cycle single phase. The instrument panel is hinged for easy inspection. To the left of the panel, are located the rectifying element, ventilating fan which forces air through the selenium rectifier and the central fuse box protected by 15 amp. fuses. On the lower right is located the transformer with voltage adjustment to compensate for line variation.

AUTOMATIC TRANSPORTATION COMPANY, Dept. CP, 149 West 87th St., Chicago 20, Ill.

When inquiring specify CP A6033 — see handy form pages 2-3



ISSUED PERIODICALLY BY R-S PRODUCTS CORPORATION, PHILADELPHIA 44, PA., FOR THOSE CONCERNED WITH FLOW CONTROL AND SHUT-OFF

Corrosion and Erosion in Valves

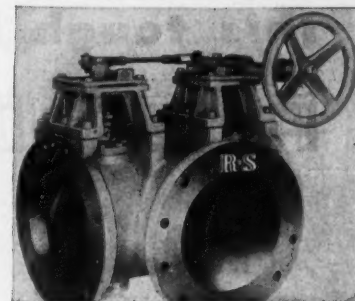
Corrosion is the major valve problem of many engineers. In the absence of any universal all-satisfying answer to the problem, R-S offers two contributions of measurable value. First is for the user who must avoid replacement and shut-down during the longest possible intervals. For such users the regular range of R-S Butterfly Valves can be had in metals of varying degrees of corrosion resistance. Thus either body or vane, or both, can be made of any specified alloy of steel, aluminum, brass, bronze, Monel metal, stainless steel, and others including R-S Products' own "A" and "H" Metals. Among these metals many acids, alkalis, and other chemicals meet real resistance to their corrosive action. Certain of the stainless steels, for example, lose as little as .00035" per month to the attack of mild solutions of sulphuric acid (more corrosive than the concentrate), and several types offer full resistance to many highly corrosive chemicals.

Some engineers hold that it is hopeless to fight corrosion; that the best policy is to surrender, buy low-cost valves, and replace frequently. For these the R-S Wafer type Butterfly Valves are a boon. They have a narrow face-to-face dimension, they are low in cost, light, easily handled, and quickly replaced. Available in all metals with free-revolving or wedge-type vanes.

Erosion is another characteristic ailment of valves against which R-S design offers advantages over the conventional type of valve. First of these is the fact that the Butterfly Valve offers minimum resistance to the flow of the material so that minimum turbulence occurs in the area of the valve. Turbulence, obviously, exaggerates the erosive effect of abrasive materials. Moreover, the vane of the Butterfly Valve is not surrounded by pockets, seats, or other impediments which contribute to turbulence. Further, the design of the Butterfly vane is such that approach to the closed position does not create a "jet" effect as in conventional valves but causes abrasive materials to "fan out" as they reach the low-pressure side of the vane.

Again, as in the consideration of corrosive action, there is a wide latitude of metals to help resist erosion. R-S "A" metal is an example of a material offering high resistance to erosion. "A" metal is a tough, dense metal of uniform grain and high endurance limit, resistant to galling, wire-drawing, and abrasive materials.

Another highly abrasion-resistant metal is the new high-Brinell Stainless Steel developed by R-S Products' engineers. This shows a Brinell figure of 1050 at 70°F. and 540 at 1100°F. as compared with corresponding figures of 170 and 121 untreated.



R-S Type 630. "H" Metal 3-way Butterfly Valve with R-S heavy duty handwheel control, self-locking worm and gear and cross-linkage mechanism. Valve has two vanes, one normally closed while the other is open.

"A" Metal Case History

Illustrating the advantages both of R-S "A" metal and the butterfly type of valves is an installation in a line leading to a condenser and used for shut-off under 70 pounds pressure. Previous installations of conventional type valves had to be replaced every six to eight months as the abrasive action of the fluid in the form of a high pressure "jet" wore a hole through the casting. The length of service was tripled by using an R-S Butterfly valve made of "A" metal.

It was demonstrated that in the butterfly valve even abrasive materials "fan out" into a crescent shaped spray when the vane approaches a closed position, rather than forming a "jet" as in other types of valve. This characteristic, aided by the dense, tough R-S "A" metal produces notably good results under the hard wear and severe stresses of this service.

"A" metal is being specified in many R-S Butterfly Valves for pressures up to 900 p.s.i. under exceptionally rigorous conditions of service.

R-S Sanitary Valve for Canning and Food Industry



Specially designed for Canning and Food Industries. 2 1/2" R-S Stainless Steel Butterfly Valve with American sanitary threads. 150 p.s.i. Heavy duty hand-lever assembly. Available in 18-8 Stainless (Type 302-304) and in 18-12 Mo Stainless (Type 316).

Shut-off 100% Complete —and it Stands up!

The R-S rubber-seated valve is available for service at all temperatures between -20°F. and plus 200°F. Dead tight shut-off is attained by the action of the bevelled vane against the rubber "spool," seat, or liner. The spool is made of a specially developed rubber, molded to fit the body, but almost loose in fit and easily fitted by hand, without tools.

As the vane approaches the closed position, a bunching of the rubber takes place at the shaft-bosses assuring dead tight shut-off at these critical points as well as around the periphery of the vane.

Test runs involving as many as ten thousand complete openings and closings have left R-S rubber-seated valves unpaired as to closure. Some purchasers buy a spare rubber-spool for every three or four valves, but none has yet been needed.

The flanges of the spool are pierced to match the valve flange bolts and serve in place of the gaskets usually required.

Complete R-S Valve Installation Data

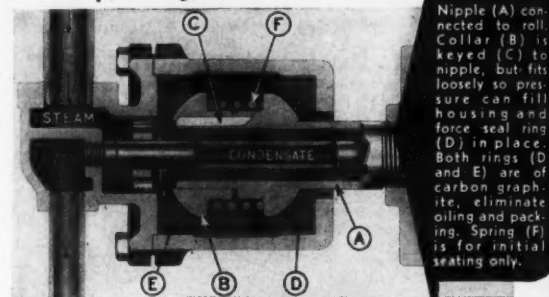
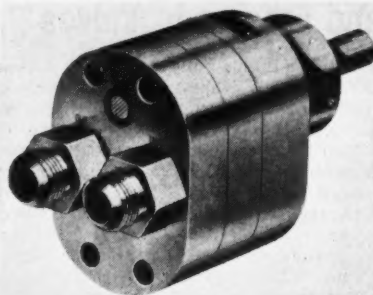
Engineers like the complete dimensional data supplied for R-S Butterfly Valves. Dimensions are tabulated by standard sizes under stock types and identified by letters corresponding to detailed drawings which accompany the tables. Six full pages of R-S Products' Catalog No. 14-B (copy on request to R-S Products Corporation, Wayne Junction, Philadelphia 44, Pa.) are devoted to this basic installation data.



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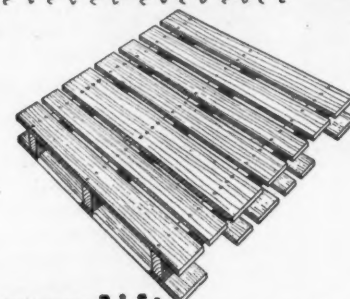


When inquiring specify CP A6034 . . . see information request blank, pgs. 2-3

RIGID
WORK-SAVER PIPE TOOLS
 THE RIDGE TOOL COMPANY - ELYRIA, OHIO, U.S.A.



THIS  **OR THIS** 



When inquiring specify CP A6038 — see handy form pages 2-3

ARMORGRID FLOORING

withstands heaviest traffic

No matter how heavy the loads — nor how hard the traffic — Hendrick Mitco Armorgrids never require replacement. Completely fabricated units, Mitco Armorgrids require no bolts, rivets or assembly work.



Neither do they depend upon fill for development of full strength in resistance to shock loads.

□ Unequaled for floors, platforms and ramps that have to withstand grinding loads, heavy shocks and continuous wear. Write for full information.

Perforated Metals
Perforated Metal Screens
Architectural Grilles
Mitco Open Steel Flooring,
"Shur-Site" Treads and
Armorgrids. **HENDRICK**
Manufacturing Company
32 DUNDAFF ST., CARBONDALE, PA.
Sales Offices in Principal Cities

When inquiring specify CP A6039 — see handy form pages 2-3

Do you need SPECIAL FASTENING DEVICES made of non-corrosive alloys?

DOES your production call for special fasteners made of non-corrosive alloys — screws, nuts, bolts or any other "made-to-order" fastening device? Allmetal has the "know-how" and facilities to make such specials accurately and economically, and to deliver them promptly. We have equipment for tapping, slotting, reaming, turning, drilling, threading, stamping, broaching and centerless grinding . . . and we work not only with stainless steel but with monel, everdur, duralumin, brass or any other non-corrosive alloys. Write, wire or 'phone for our quotation.

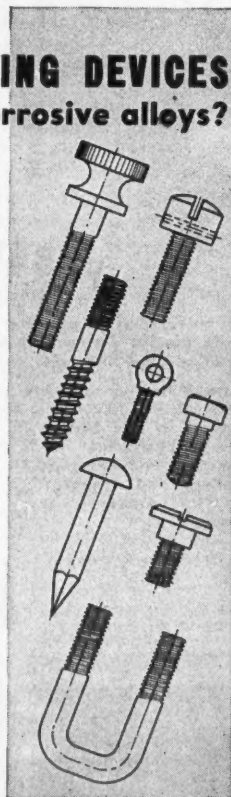
Send for FREE CATALOG



This new, 83-page catalog helps you select the correct size and type of non-corrosive fastening device for any particular job. Includes stock sizes, typical specials, engineering data, etc. Make request on company letterhead.

Write to
Dept. A

ALLMETAL SCREW PRODUCTS CO.
80 Grand Street, New York 13, N. Y.



When inquiring specify CP A6040 — see handy form pages 2-3

Production

but pumps can be furnished for flange, belt, spline and other drives. Positive sealing accomplished with linear packing, double U cup seals. Seal chamber pressures are relieved to the suction side of pump to remove excessive seal pressures.

Description — Power requirements vary from fractional to 6½ HP. Aluminum-constructed body with nitrated nitralloy gears.

THE McINTYRE CO., Dept. CP, 732 Riverdale Ave., Newton 58, Mass.

When inquiring specify CP A6041 — see handy form pages 2-3

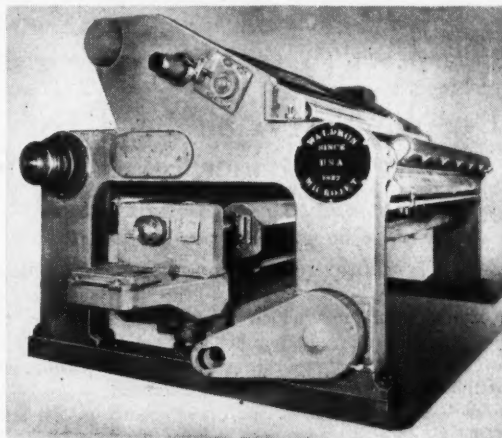
★

Coating Machine is All-in-One Unit For Uniform Application

*Roller applies superfluous coating, air blade
planes off excess amount*

Uses — A completely coordinated coating machine for applying emulsions, gums, resins, asphalts, aqueous and other coatings in a controlled, uniform manner. Used in paper, paperboard, photographic paper and film, floor covering, roofing, wallpaper and textile industries.

Features — Unit is compact, combining groups of indi-



Microjet coating machine

vidual equipment previously assembled for this work. Roll applies excessive coating; coating head, an air blade fitted with a slot, planes off unneeded coating, leaving a uniformly coated surface. No roll, doctor or brush touches coated surface after the coated web passes in front of air blade, hence coating is undistributed, free of marks and scratches. Ruggedly constructed, with enclosed drives. Complete coating system is fitted with variable voltage drive and loop control device, also moisture-regulating and recording instruments.

Description — "Microjet" Coater. Supplementary equipment for handling, drying, winding, etc., includes specially designed flying splice unroll stand, air compressor and tension control attachment, a straight pass conveyor-type air dryer, tension control unit and an automatic winder.

JOHN WALDRON CORPORATION, Dept. CP, New Brunswick, N. J.

When inquiring specify CP A6042 — see handy form pages 2-3

**This extra-long
taper makes your
pipe reaming
quick, easy
and safe**



RIDGID LonGriP Pipe Reamer

● The trick of its efficient performance is in that extra long taper—it reams burr cleanly from any pipe in a few easy ratcheted strokes—practically no pressure required. Even more important than that, it won't thin, split or flare pipe or conduit wall. That saves you pipe as well as time and work. You may buy it complete with ratchet handle—or ask for the reamer unit alone, which fits your RIDGID No. 00R handle. See your Supply House for this better reamer.

Reamer unit
fits RIDGID
No. 00R handle.



RIDGID
WORK-SAVER PIPE TOOLS
THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U. S. A.

When inquiring specify CP A6043 — see handy form pages 2-3

**PAYLOADERS
REPLACE
MISSING
MANPOWER**



Why worry about the men who are not to be had? In many process plants, the manpower problem for handling bulk materials has been eliminated with Hough Payloaders.

These compact, readily-maneuverable units speedily pick up their loads, hoist them and carry them to nearby or distant points and dump them into trucks, bins or pits.

The Model "HA" Payloader, will load, carry 100' and dump at the rate of 25 tons or more per hour. Note how easily this unit goes in and out of box cars where it is a great time saver. *Hundreds of Payloaders are in Service with nearly every nationally known Fertilizer and Chemical Company. Ask for Bulletin 162.*



THE FRANK G. HOUGH CO.
Libertyville, Illinois
"Since 1920"

HOUGH Payloader SHOVELS

When inquiring specify CP A6044 — see handy form pages 2-3

LEAKPROOF JOINTS



With JOHN CRANE
Insoluble PLASTIC LEAD SEAL

- Insoluble in water, gasoline, propane, CO₂, etc. Won't wash out.
- Seals quickly; fills clearances and imperfections.
- Stops galling, rust. Never hardens; joints easily taken apart later.
- Ready for use, in 1, 5, 7-lb. cans.

Order a trial can of Plastic Lead Seal—watch it reduce maintenance in your plant or product.



CRANE PACKING COMPANY

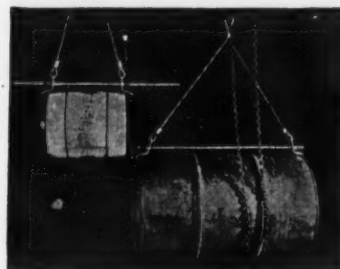
1821 CUYLER AVE. - CHICAGO 12, ILL.

When inquiring specify CP A6045 — see handy form pages 2-3

Production

Safety Drum Sling Is Specially Designed For Hoisting Drums

Heavy clips mounted on a rod with an adjustable pressure spring at each end assures firm grip



Spacing of clips is quickly altered

until it is deliberately released. The spacing of these clips can be quickly altered and put in place to fit any size barrel, drum or keg.

Description — Sling is equipped with 5/16" plow steel wire rope and has a minimum breaking strength of 8,000 pounds. The entire assembly is hot dip galvanized to prevent rust. Further information can be secured.

WIRE AND CABLE DIVISION, THE WIND TURBINE COMPANY, Dept. CP, West Chester, Pa.

When inquiring specify CP A6046 — see handy form pages 2-3

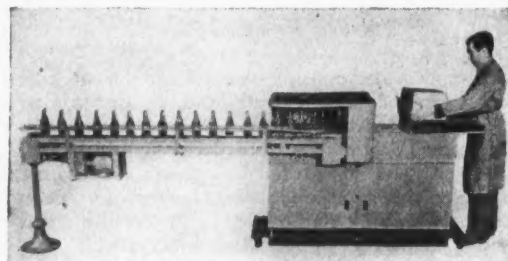
★

Unscrambling Unit Used For Sorting Containers in Plant

60 to 240 containers handled per minute in operation which eliminates breakage

Uses — To systematically and automatically unscramble or regiment a carton, box or crate of bottles, jugs, jars, cans or other similar containers which has been unloaded on the table of the machine, in a manner that permits them to be conveyed one after another to the conveyor without the aid of human hands or any personal attention.

Features — With this unit, one operator can unload from



Eliminates necessity of operator handling mouth of bottle

60 to 240 bottles, jars, cans, or containers of most any size per minute from a carton onto the conveyor and discharge them to filler in a single line.

Description — Unit meets all sanitary requisites. Information on the unit will be furnished on request.

ISLAND EQUIPMENT CORPORATION, Dept. CP, 101 Park Ave., New York 17, N. Y.

When inquiring specify CP A6047 — see handy form pages 2-3



★ Here is an exciting new kind of label. It adheres firmly to any smooth surface—metal, plastic, glass, wood, painted or varnished. Won't dry out and fall off—yet like magic are easily peeled off in one piece without leaving a trace! ★ At last you can place instructions, warnings, tradenames, describe finishes, point out features, directly on the product at the very place such data should be carried. ★ When these Kum-Kleen stickers have served their purpose, they may be peeled off without scraping or tearing—a feature your customers will appreciate. ★ They are quickly applied without moistening—are available in any size, shape or color, printed to your specifications. ★

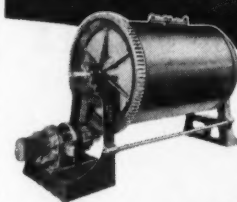
Send for sample and complete information Address Dept. CP-11

EVERY ADHESIVE LABEL CORPORATION, 36 W. Union St., Pasadena 1; 41 Park Row, New York 7; 608 S. Dearborn St., Chicago 5, and principal cities. In Canada, Enterprise Sales, Toronto.

EVERY **KumKleen** LABELS

When inquiring specify CP A6048 — see handy form pages 2-3

Step Up Fine Grinding Mixing and Blending



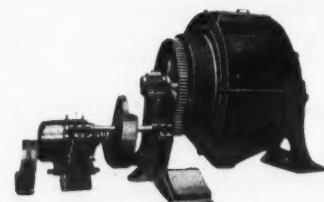
with
ABBÉ
PEBBLE & BALL MILLS

For pulverizing or grinding wet or dry materials, you're sure to do the job right in an Abbé porcelain-lined Pebble Mill or an alloy steel ball mill.

Abbé Mills are made to your needs in operating capacities from 30- to 10,000-lbs. charge, combining grinding and dispersion in one operation. They may be jacketed for heating or cooling, and operated under pressure or vacuum.

Write for Catalog
No. 55.

Abbé Ball Mill with dust-proof housing for dry grinding.
Above — Pebble Mill for wet grinding.



ABBÉ ENGINEERING CO.

46 CHURCH STREET NEW YORK 7, N. Y.

Mills • Mixers • Sifters for Any Process

When inquiring specify CP A6049 — see handy form pages 2-3

Balance

WITH **CHIKSAN**

COUNTERBALANCE
SWIVEL
JOINTS



REPRESENTATIVES IN
PRINCIPAL CITIES

EXPORT REPRESENTATIVE:
Chiksan Export Co., Brea, Calif.
Branches: NEW YORK 7, HOUSTON 2



CHIKSAN COMPANY
BREA, CALIFORNIA
New York 7 Houston 2

You save the trouble and expense of bolting or welding counterbalance connections to your Swivel Joints when you use CHIKSAN Ball-Bearing Swivel Joints...because CHIKSAN Joints are provided with counterbalance connections as an integral part of the Swivel Joint. Lines are quickly and easily fitted up merely by threading in pipe of required length and attaching counterbalance weight, thus making the line lighter and easier to handle. Many other applications are in use. Write for latest Chiksan Catalog. Over 500 different Types, Styles and Sizes for every purpose.

Production

New Fire Hose is Water and Mildew Resistant

Is built to withstand the abrasive action of gravel, cinders and rough surfaces

Uses — For fire fighting equipment.
Features — This all weather double jacketed hose is built to withstand the abrasive action of gravel, cinders and rough surfaces over which it may be dragged. It will withstand extreme temperatures, from freezing cold to blistering heat. Water repellency and mildew resistance are features of importance.

Description — Both hose jackets get a double treatment of the "all-weather" process to make doubly sure that all the fabric is thoroughly impregnated. A mildew treatment is applied at the same time. The edges of the hose are strongly reinforced with special high tension cable cord yarns having the greatest possible wear at points where it is most needed. Write for information.

AMERICAN - LaFRANCE - FOAMITE
CORP., Dept. CP, Elmira, N. Y.

When inquiring specify CP A6051
— see handy form pages 2-3

Neoprene Coated Coverall Is Impervious To Oils and Greases

Protection offered against acids and alkalis

Uses — This garment is designed to give protection to workers in hazardous locations.

Features — Worker protection from head to foot is assured. A hood snapped on at the back of the collar protects the head and goggles or face masks can be comfortably worn when the hood is in place. Impervious to oils and greases, the coverall resists acids and alkalis.

Description — Made from buff-colored neoprene impregnated airplane cloth the garment is attractive in appearance, does not readily discolor and is easily cleaned by the use of soap and water. When greases are spilled on the garment, a solvent cleaner may be used without harm to the fabric. Weight is three pounds and this lightness will be found especially useful in tank cleaning. Information may be had by writing.

BENSON AND ASSOCIATES, Dept.
CP, 310 S. Michigan Ave., Chicago 4,
Ill.

When inquiring specify CP A6052
— see handy form pages 2-3

MEET THE "Acid Test" with Acid-Causticbond

FOR PROTECTING

Masonry • Metal • Concrete • Wood

*against direct contact with
corrosive acids and caustics*

A brush-applied, air-dry coating to prevent corrosion of tanks, floors, and equipment used for storage, or processing strong caustics and corrosive acids. Acid-Causticbond will help you meet the "Acid (and alkali) Test" in protecting equipment. Acid-Causticbond resists:

Acetic Acid	Bleach Solutions	Caustic Soda
Hydrofluoric Acid	Chlorine	Calcium Chloride
Lactic Acid	Cyanides	Tri-Sodium Phosphate
Muriatic Acid	Formaldehyde	Escaped Flue Gases
Nitric Acid	Salt Solutions	Pickling Solutions
Oleic Acid	Sodium Hydroxide	Fruit and Vegetable Juices
Phosphoric Acid	Sodium Hypochlorite	Lubricating Oils
Sulphuric Acid	Sulphur Dioxide	Refrigerants

OTHER W & W PROTECTIVE COATINGS FOR INDUSTRY

RUBBERCOAT No. 340

Based on the famous Ins-X Formula, this one-hour-dry coating gives the protection and durability of Rubber. It is waterproof, chemical and caustic resistant, and impervious to lime, grease, oils, alcohol, etc. Its long-lasting qualities and rapid drying make it outstanding for industrial use.

BRINE-PRUF

A protective coating which withstands immersion in water or salt brine. For use in brine ice cans — salt water tanks — ship-hulls; refrigeration equipment, etc.

No. 71 CONCRETE TANK LINER

Especially developed during the war for protecting tanks and tank cars from the corrosive action of High Octane Gas and sour Oil.

Send for our "Chemical Resistant Coatings Portfolio" which describes these Protectioneered Products in detail



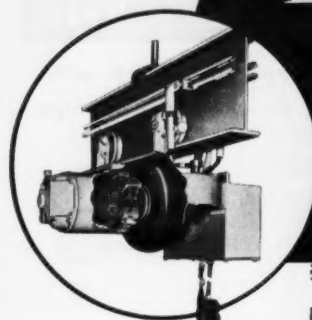
Dept. 9011
Greenleaf & Leon Streets
Boston 15, Mass.

When inquiring specify CP A6050 — see handy form pages 2-3

When inquiring specify CP A6053 — see handy form pages 2-3

Automatic Carriers

FOR OVERHEAD HANDLING



American Planetary Gear MonoTractor

American Spur Gear Mono-Tractor



Through the application of simple electrical and mechanical devices, American MonoTractor Units perform automatic operations with extreme accuracy and reliability, saving costly handling labor and supervisory attention.

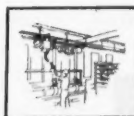
While unique in many features, such systems are built mainly from standard units. Mono-Tractors can be applied to carriers operating on any smooth bottom track. An American MonoRail Engineer is available for consultation in every important industrial area.



Delivery to multiple stations.



Delivery to movable stations.



Selective dispatch between multiple stations.



Loading and delivering to multiple stations.

THE AMERICAN MONORAIL COMPANY

13109 ATHENS AVE. • CLEVELAND 7, OHIO

When inquiring specify CP A6054 — see handy form pages 2-3

Production

Conveyor is Rust-Proof and Withstands Weather and Dust

Wheel treads are heavy zinc plated and side discs are red baked enameled

Uses — For conveyor service in wet, dusty and corrosive locations as well as out-of-door places.

Features — Wheel treads and hubs are protected with a heavy zinc plate. Side discs of the wheels are covered with red baked enamel. A special inner seal excludes water, dust, grit or other harmful foreign matter from the full ball bearings, insuring smooth operation.

Description — Ten and five ft. lengths are available as well as 90, 60, 45, and 30 degree curves with an inside radius of 2'-6". Curves are reversible and are supplied with guard rails on the outside and adjustable center leg supports. Weight of the conveyor is approximately 7 to 8 pounds per ft. Standard adjustable tubular stands for supporting the conveyor, package stops and other accessories are available. Stands have a coupling which permits rigid coupling and removal of any section without disturbing adjoining sections. Complete literature is available.

THE E. W. BUSCHMAN CO., Dept. CP, Cincinnati 2, Ohio.

When inquiring specify CP A6055 — see handy form pages 2-3

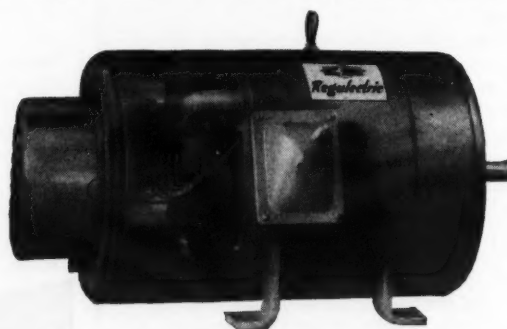
★

Power Line Quality Voltage From Engine Generator Set

Voltage regulation within 2% plus or minus obtained from generator by electrical means

Uses — Generator is designed for use in engine-generator sets and provides stand by and other power requirements for elevators, meat packing plants, locker plants, and canning factories.

Features — Prime feature is the constant voltage regulation derived from the series resonant circuit incorporated in the design of the unit. This circuit enables the generator



Voltage regulator circuit has no moving parts

to deliver the required voltage so that lights stay bright and motors which are served remain at top performance. There is no undervoltage with heavy loads or overvoltage at light loading periods.

Description — Built in voltage regulating circuit requires no attention in operation to maintain the voltage desired at powerline performance. Regulation is set at the factory and will hold voltage within 2% plus or minus from no load to full load with normal engine speed regulation.

ALSOP "Hy-Speed" MIXERS & FILTERS

For every liquid processing job

"Hy-Speed" Mixers & Agitators

Our complete line of Mixers and Agitators include the portable type for mounting on open tanks and the vertical type for permanent mounting through tops of tanks in a wide variety of propellers and capacities for maximum mixing efficiency. Fixed side-entering Agitators are available in sizes up to 50 H.P. for specific conditions and requirements.

"Sealed-Disc" Filters

Alsop "SEALED-DISC" Filters provide maximum possible flow rate with positive clarity and with a minimum of supervision and operating labor. Sizes with or without pumps range from 1 gal. p.m. to thousands of gallons per hour. Made of Stainless Steel, Monel Metal, Bronze, etc. We invite you to use our services in the solution of your filtration and agitation problems. We shall be pleased to let you have our report and recommendation promptly, there's no obligation.

Alsop Engineering Corp.

Filters, Pumps, Tanks, Mixers, Agitators
111 Alsop Square, Milldale, Connecticut

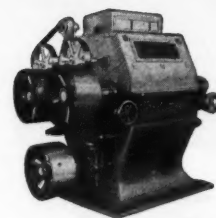
When inquiring specify CP A6056 — see handy form pages 2-3

OUTSTANDING EFFICIENCY
LOW OPERATING COST
LARGE-VOLUME PRODUCTION

WITH
SPROUT-WALDRON'S
IMPROVED "46"

ROLLER MILL

with
SPROUT-WALDRON'S
IMPROVED
'46 ROLLER MILL



Like all the other machines in the complete SPROUT-WALDRON line, S-W's IMPROVED Roller Mill is expertly designed and engineered. Famous for its outstanding efficiency on large-volume production, this machine is exceptionally economical and easy to operate. Call your Sprout-Waldron representative or write for complete details on the Sprout-Waldron line . . . the machinery you need for truly efficient production.

SPROUT-WALDRON & COMPANY

Manufacturing Engineers

MUNCY

PENNSYLVANIA

When inquiring specify CP A6057 — see handy form pages 2-3

ROLLER CHAIN DRIVES FOR EVERY PURPOSE

Center: High ratio
No. 433 Drive,
100 h.p. motor,
220-1540
r.p.m.

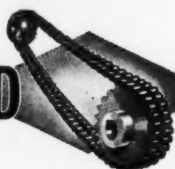


No. 478
Diamond
Roller Chain
drive, 220 h.p.
motor.

Triple No. 433—hoist
drive, 92 h.p. motor
at 1520 r.p.m.

Whether you need a small drive or one of several thousand horsepower—high speed or low—short or long center distance, DIAMOND Roller Chains will transfer the power from motor or engine with 98-99% efficiency. . . . They withstand shock loads, protect bearings—reduce delays and maintenance. Ask for Catalog 595 containing 96 pages of helpful drive data. DIAMOND CHAIN COMPANY, Inc., Dept. 411, 402 Kentucky Ave., Indianapolis 7, Ind. Offices and Distributors in All Principal Cities.

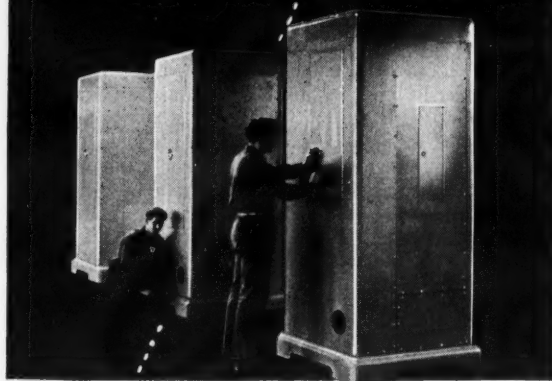
DIAMOND



ROLLER CHAINS

When inquiring specify CP A6058 — see handy form pages 2-3

A DEPENDABLE SOURCE . . . for Accurate Sheet Metal Fabrication



• For 39 years leading manufacturers have relied on Kirk and Blum for custom-built sheet metal parts and assemblies. We fabricate Sheet Steel and Light Plate, Stainless, Aluminum, Monel and other alloys—in all gauges up to and including 3/8" thick.
Send us your blueprints for prompt quotation.

KIRK AND BLUM . . .

AN ORGANIZATION OF ENGINEERS AND SKILLED MECHANICS

2833 Spring Grove Ave., Cincinnati 25, Ohio

When inquiring specify CP A6059 — see handy form pages 2-3

Production

Generator is of the revolving field type, and is built in these ratings: 5, 7½ KW, 60 cycle, single phase 1200 rpm. and 7½, 10 KW, 60 cycle, three phase 1200 rpm. In the 1800 rpm class, are offered 7½, 10 KW 60 cycle single phase and 10, 15 KW, 60 cycle, three phase sets. The principle of electrical resonance, long used for needle-sharp tuning in the radio field, holds the voltage constant in this engine generator. Full information is supplied by the manufacturer.

ELECTRIC MACHINERY MFG. COMPANY, Dept. CP, Minneapolis 13, Minn.

When inquiring specify CP A6060 — see handy form pages 2-3

★

Ribs Replace Guide Wire In Bead Guide Rotameter Tube

A bead-guide rotameter metering tube is described in a two page bulletin. This newly developed tube eliminates necessity for float guide rods, as the guiding of any shaped float is done by three ribs formed in the inner face of the tapered, corrosion-resistant glass metering tube. Float position in opaque liquids is easily read. Corrosive liquids can be handled, since the float material can be selected without considering the need for drilling it and without having to consider guide wire materials. One section contains a full page of flow ranges available to simplify old style meter modernization. A full length drawing illustrates this unit. Write for Catalog Section 15-A.

FISCHER & PORTER CO., Dept. CP, Dept. BG., Hatboro, Pa.

When inquiring specify CP A6061 — see handy form pages 2-3

FILTERFAB

FILTER MEDIUMS

For all processing and refining industries.

Whatever your filtering problems are you can look to Filter Fabrics for the scientifically correct solutions.

Tell us your needs. We'll be glad to send prices and full information.

Immediate Deliveries

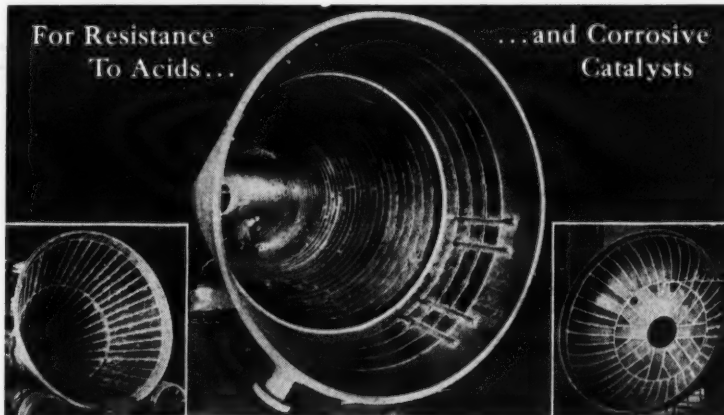
Filter Fabrics, 1257 W. 4th St.,
Cleveland 13, Ohio



When inquiring specify CP A6062 — see handy form pages 2-3

For Resistance
To Acids . . .

. . . and Corrosive
Catalysts



HASTELLOY Alloy Is Used for Isomerization Tank Linings

• This 63-foot isomerization tank is strip-lined with HASTELLOY alloy B, which effectively resists the hydrochloric acid formed when the aluminum chloride catalyst hydrolyzes.

HASTELLOY alloy eliminates shutdown time for replacements because its high resistance to corrosive substances means longer life of equipment.

HASTELLOY alloys are available in many forms and can be fabricated into a wide variety of chemical-processing equipment.

For further information, write for the booklet "HASTELLOY High-Strength Nickel-Base Corrosion-Resistant Alloys."

HASTELLOY Alloys Offer These Advantages:

1. Resistance to hydrochloric acid, cold or hot, dilute or concentrated.
2. Resistance to sulphuric acid, cold or hot, dilute or concentrated.
3. Resistance to oxidizing agents such as ferric chloride and wet chlorine.
4. Resistance to abrasion and wear.
5. High strength and toughness.
6. Variety of forms—castings, welding rod, mill forms, or fabricated equipment.

Haynes Stellite Company

Unit of Union Carbide and Carbon Corporation

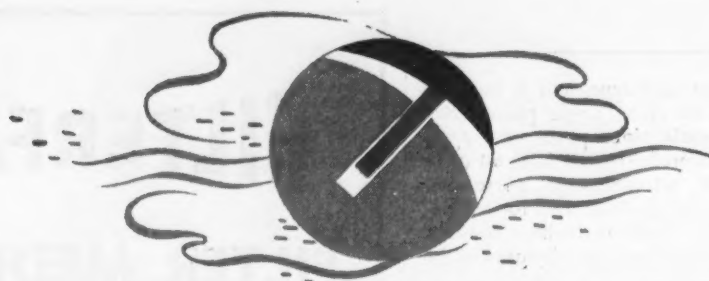
UCC

General Offices and Works, Kokomo, Indiana
CHICAGO—CLEVELAND—DETROIT—HOUSTON
LOS ANGELES—NEW YORK—SAN FRANCISCO—TULSA



HIGH-STRENGTH NICKEL-BASE ALLOYS FOR CORROSION RESISTANCE

When inquiring specify CP A6063 . . . see information request blank, pgs. 2-3



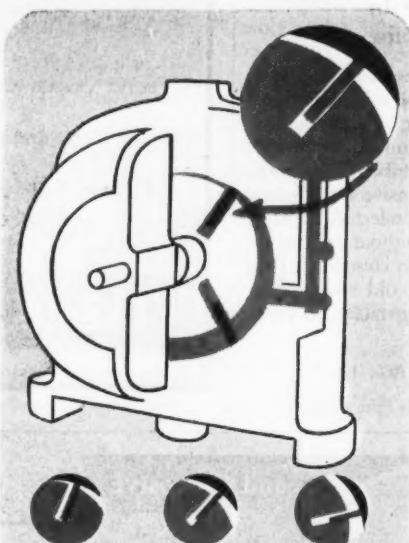
UTTER SIMPLICITY, MASTERFULLY DEVELOPED

... the Gast Vacuum Pumps (to 28 in.), Compressors (to 30 lbs.), and Air Motors (to 1 b.p.)

Gast design shows what can be done by working *WITH* principles instead of settling one design problem by creating two new ones. And Gast manufacturing exemplifies the old truism about doing one thing well.

The result is a line of rightfy-priced, service-free vacuum pumps, compressors and air motors of the kind manufacturers appreciate having as original equipment on their machines, and users like to find there.

If you do not use air power but *COULD*, to better advantage, or if you already use air power, Gast, surely, will prove to be your better selection from both the original cost and the performance-and-maintenance standpoints, as it has for increasing scores of makers of a wide variety of machines and equipment. Avail yourself of Gast application experience, have Gast simplicity and faithful performance working for you ever after! GAST MANUFACTURING CORPORATION. 101 Hinkley St., Benton Harbor, Mich.



Vanes: Self-seating... self-adjusting... springless. Centrifugal force holds them against cylinder wall. They "work without works"... Continuous, non-pulsating flow... More air per

pound of weight, more air per horsepower... Forced-air cooling: long life, oil economy, no hot-oil odor... Automatic shaft seal: no packing, no leaking, no adjusting.

ENGINEERING TEST OFFER —So You Can SEE IF YOU'RE MISSING SOMETHING!

Simply write our Engineering Department and explain the operation you think air might handle, or describe the job air is already doing for you. Our Engineering Department will study your problem, select or design a Gast unit to do the specified work at less cost or at greater efficiency or both. Then, **without cost** or obligation, the recommended unit will be shipped to you for your performance tests.



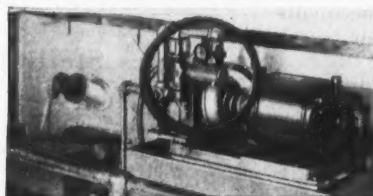
GET THIS IDEA-CATALOG

It not only tells how Gasts are built and all about them, but suggests uses that may not have occurred to you. Write for it; no charge or obligation!

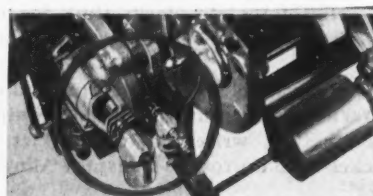
GAST

ROTARY

VACUUM PUMPS · AIR COMPRESSORS · AIR MOTORS



Supplying Air to Industrial Oil Burner



Vacuum Service on a Labeling Machine

When inquiring specify CP A6064 ... see information request blank, pgs. 2-3

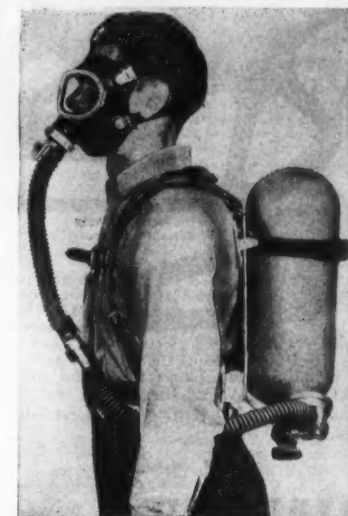
Production

Demand Type Oxygen Mask Ready For Quick Use

There is no possibility of contamination by oil, mists, dirt, fumes, or carbon dioxide

Uses — Provides respiratory protection for the wearer in unbreathable air, extending from 1/2 hour during hard physical exertion to 1 hour of moderate activity.

Features — Pure oxygen recommended for use eliminates all guesswork as to air conditions. There is no possibility of contamination by oil mists, dirt, fumes, carbon monoxide or other hazards.



Breathing tube has quick-disconnect fitting

Breathing tube has quick-disconnect fitting and the front piece can be quickly disconnected to conserve oxygen supply during stand by periods in fresh air. Fogging of facepiece is eliminated by passage of cool oxygen over the lenses. No special training or practice is required for use of this equipment. The wearer needs only to put on the mask, open a valve, and breathe.

Description — Oxygen from a refillable cylinder, worn on the user's back, is released to a demand type regulator attached to the cylinder. This regulator is actuated by the wearer's breathing, and permits flow of oxygen in required amounts to breathing tube and facepiece. A by pass needle valve can be opened to permit oxygen flow direct from cylinder to breathing tube if necessary. The cylinder contains 38.4 cu. ft. of oxygen at an initial working pressure of 1800 lbs. A pressure gauge, mounted on chest fitting, shows amount of oxygen in the cylinder at all times. Complete apparatus is supported by a comfortable harness which is easily and quickly put on. A similar assembly, employing an 11 cu. ft. cylinder carried in a front type sling is available for shorter protection periods. Detailed literature is obtainable by writing.

MINE SAFETY APPLIANCES COMPANY, Dept. CP, Braddock, Thomas, and Meade St., Pittsburgh 8, Pa.

When inquiring specify CP A6065 — see handy form pages 2-3

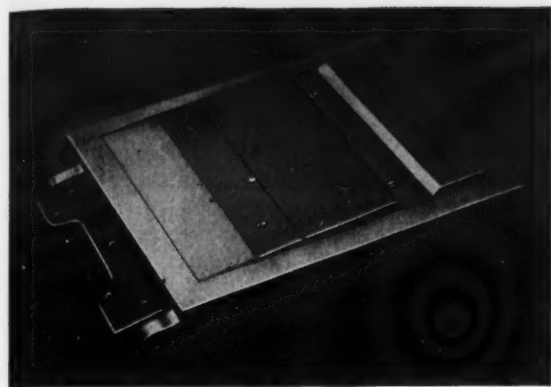
★

Fast, Economical Expander Repairs Hard-To-Reach Boiler Tubes

Expands; or flares and expands, all tubes without cutting, dismantling jacket

Uses — For fast, economical repairs where boiler construction makes tube inaccessible for ordinary retubing methods. Designed to roll far end of tubes into the tube

CHEMICAL REVIEW



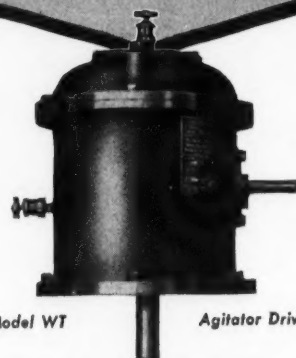
NIAGARA PERMAFLUX spout type magnets are built of Alnico, the strongest magnetic alloy known. Their exclusive "double gap" construction with recessed surface insures effective removal of magnetic impurities from a wide variety of products. Because they require no electrical current and have no moving parts to wear out they furnish dependable and economical protection.

Write today for descriptive literature.

RICHMOND MFG. CO.
LOCKPORT, N. Y.

When inquiring specify CP A6066 — see handy form pages 2-3

NETTCO FOR YOUR
SPECIFIC AGITATING
REQUIREMENTS



NETTCO Model WT

Agitator Drive Unit

For nearly half a century, the New England Tank & Tower Company has developed standardized parts and units which can be economically combined to provide highly specialized stirring equipment of many sizes, types and ratios. The economy, sound engineering, and rugged construction of NETTCO equipment are contributing importantly to the efficient operation of many a well-known process plant. End your agitating problems — once and for all — with dependable NETTCO Equipment!

Write for Catalog.

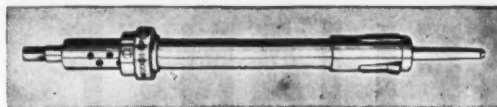
NEW ENGLAND TANK & TOWER CO.
93 TILESTON STREET, EVERETT 49, MASSACHUSETTS

When inquiring specify CP A6067 — see handy form pages 2-3

Production

sheets in installations where there is no provision to gain entry for readily rolling tubes.

Features — Special arch tube expander eliminates climbing into fire box to reach inside ends of the lower pass tubes. Also avoids dismantling outer boiler jacket or cutting through jacket with acetylene torch to gain access to all of tubes. Revolving stop collar on frame extension permits



Arch tube expander

adjustment for various length tubes. Tapered rollers provide parallel expansion. Furnished with tapered and flaring rollers to flare as well as expand, or tapered rolls for expansion only.

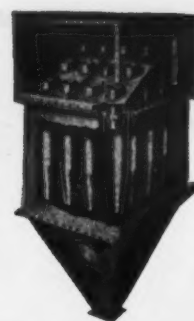
Description — Expander enters from smoke box, or fire door, reaching through whole length of tube to roll far end. Manufactured with solid frame shank, or in two parts joined by quick-acting coupling. Mandrel furnished solid or in two parts. Split design is particularly adaptable where boiler is placed so close to wall that there is barely clearance to replace tubes and not enough space to insert one-piece expander. Expander frame and front section of shank are first inserted in tube. Second section is then joined to it. Mandrel is inserted in same manner. Available in wide range of sizes.

RICHARD DUDGEON, INC., Dept. CP, 24 Columbia St., New York 2, N. Y.

When inquiring specify CP A6068 — see handy form pages 2-3



You can have ALL
these important advantages
by installing a **MULTICLONE**
for Dust Recovery



EFFICIENCY! Small diameter tubes, made possible by the patented vane which distributes the gases in the MULTICLONE, mean higher centrifugal forces, unusually efficient recovery of both small and large dust particles.

COMPACTNESS! No other unit of comparable performance is as compact as the MULTICLONE, either in square footage or cubic footage. Saves valuable space and often permits use of waste areas for dust recovery installation.

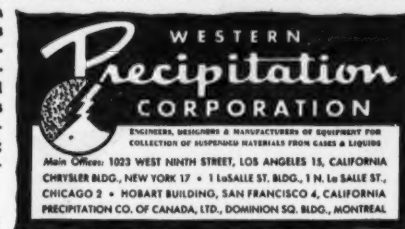
Whether your dust recovery installation calls for a combination of requirements—or one requirement in particular—you'll still find in the MULTICLONE the answer to your problem.

ADAPTABILITY! The MULTICLONE is unusually adaptable to plant installation requirements. Choice of either side-inlet side-outlet or side-inlet top-outlet (or under special construction, top-inlet side-outlet) duct connections gives an arrangement to fit your space restrictions.

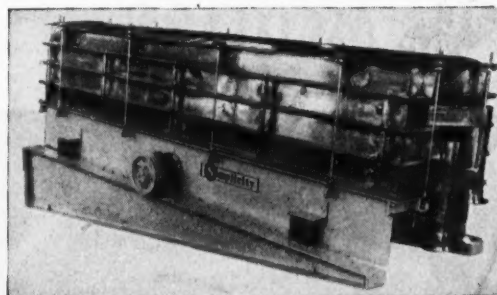
EASY MAINTENANCE! The MULTICLONE has no filters or screens to clean or replace, no high speed moving parts to maintain, and requires no supervision. These and other advantages minimize maintenance and servicing in the MULTICLONE.

Send for booklet!

When inquiring specify CP A6069 — see handy form pages 2-3



450 G. P. M. of starch passed through a 150 mesh screen cloth



The above capacity is being handled by the 2' x 10' Simplicity screen illustrated. This unit has two screen trays, each taking half the total feed with pans carrying off the liquid passing both screens. In this operation the entire unit is built of 316 stainless steel.

These 100% sanitary screens are also available in mild steel and 188 stainless and in one, two, three and four trays, 4', 6', 8', and 10' long.

Write
For recommendations covering
your own problems

SIMPLICITY ENGINEERING COMPANY
DURAND, MICHIGAN

For Canada Waterous Limited, Brantford, Ontario

When inquiring specify CP A6070 . . . see information request blank, pgs. 2-3

MOTORS FOR PUMPS by RELIANCE

RELIANCE motors for pumps are mechanically engineered to meet the specific requirements of the service for which they are intended. Precision-built, with highest quality workmanship throughout, these sturdy motors have compiled outstanding records for long, dependable performance. Available in enclosures to suit the application—protected, open and drip-proof; fully enclosed; and explosion-proof.

Specify motors by Reliance or call your nearest Reliance sales representative.

RELIANCE ELECTRIC & ENGINEERING CO.

1067 Ivanhoe Road



Cleveland 10, Ohio

Appleton, Wis. • Birmingham • Boston • Buffalo • Chicago • Cincinnati • Denver • Detroit
Gary • Grand Rapids • Greenville • Houston • Kansas City • Knoxville • Los Angeles
Milwaukee • Minneapolis • New Orleans • New York • Pittsburgh • Portland, Ore.
Rockford • St. Louis • San Francisco • Seattle • Syracuse • Tampa • Tulsa
Washington, D. C.
Sao Paulo, Brazil

RELIANCE AC DC MOTORS

Production

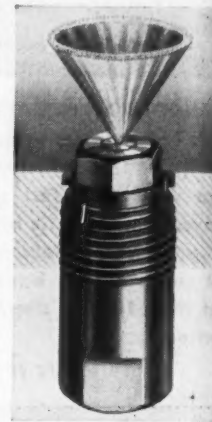
Atomizing Nozzle Designed for Wall Mounting

Operates at pressures ranging from 10 to 1000 lbs. per sq. in. Produces hollow cone type spray with uniform distribution

Uses — This nozzle may be mounted directly into the wall of processing or machine equipment. Atomizing nozzles wall mounted are ideal for such typical processing as spraying perfume into powder and shortening into flour. Another important application may be found in machinery where an atomized lubricant must be sprayed on high speed gear drive assemblies.

Features — In chemical processing involving the use of vats and mixers, nozzles of this type can simplify the work of setting up equipment for operation considerably.

Description — Wall mounted atomizing nozzles are made in a variety of materials including brass and stainless steel. The nozzle consists of three parts (1) body (2) cap with stainless steel orifice insert and (3) body with monel metal screen or strainer. Cap and core assemblies are renewable to minimize nozzle costs in operation. Water, oil, solvents and liquids with similar viscosities may be sprayed. Available in sixteen sizes, these wall mounted atomizing nozzles provide efficient operation at pressures ranging from 10 to 1000 lbs. per square inch. Atomization provided by hydraulic pressure will be found to be the finest possible for any given pressure. Spray is of hollow cone type, with uniform distribution of atomized liquid. Complete information on this nozzle is available by writing for information data sheet No. 2830.



Wall mounted atomizing nozzle

SPRAYING SYSTEMS CO., Dept. CP, 4037 W. Lake St., Chicago 24, Ill.

When inquiring specify CP A6072 — see handy form pages 2-3

★

Lift Truck Has Side Mounted Motor

Designed to carry and lift loads up to 2000 pounds in previously inaccessible places

Uses — This model will lift and carry loads up to 2000 pounds in areas previously inaccessible to lift truck operation such as tight aisles, elevators and the crowded confines of highway trucks and freight cars. It stacks loads up to 1500 lbs.

Features — Its weight of only 2800 pounds makes operation possible on two ton capacity elevators and in multi-story buildings with low to medium load limits. Unique design places the operator at the side of the power unit and makes it easy for him to get on and off. Wheel base length is 35 inches.

Description — Two wheels on the steering axle achieve a short turning radius without sacrificing safety or stability.

When inquiring specify CP A6071 . . . see information request blank, pgs. 2-3

Handling Bales with BAKER TRUCK proves more profitable than "Manhandling"

★Excerpt of letter
from The American
Ibroid Company

★ At our plant car loads of raw cotton are received in bales weighing from 450-750 pounds. Formerly this was all man-handled with hand trucks, and cotton was stored "one bale" high on end, in two sheds at opposite ends of the plant. With the Baker Fork Truck we now stack bales six high, increasing storage capacity of our "active" cotton shed by 1500 bales. Normally these 1500 bales would have gone initially into our concrete warehouse, then rehandled and moved to the "active" cotton shed before going into process. Thus we have saved double handling on 1500 bales.

No matter what type of material you handle in your plant, you can cut intraplant transportation, storage or carloading costs with Baker Trucks. Call your nearest Baker representative or write us direct.



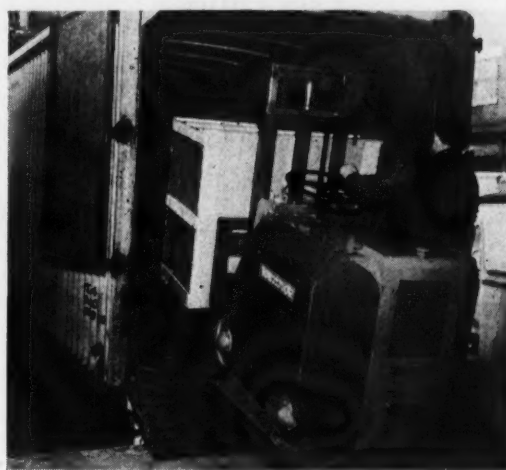
BAKER INDUSTRIAL TRUCK DIVISION
2163 W. 25th St. of the Baker-Raulang Co. Cleveland, Ohio
In Canada: Railway & Power Engineering Corporation, Limited

Baker INDUSTRIAL TRUCKS

When inquiring specify CP A6073 — see handy form pages 2-3

Production

Engine, transmission and axle units are designed for easy access. Quick removal of a side panel permits all electrical and carburetor adjustments. Clutch replacement is



Lifting and tilting mechanisms are hydraulic

possible without the removal of either engine or transmission. Lifting and tilting mechanisms are hydraulic. Literature may be secured by writing.

TOWMOTOR CORPORATION, Dept. CP, Cleveland, Ohio.

When inquiring specify CP A6075 — see handy form pages 2-3

Bench-Size Hydraulic Machine Tool Handles Pressures To 16,000 Lbs.

Many ideal low-tonnage hydraulic operations are performed with less suitable equipment due to a desire on the part of production engineers to avoid costly experiments with small hydraulic press equipment. It was specifically for such purposes that the Hydroilic Multipress, Multi-Unit Press and accessories were developed, according to a 28-page booklet concerning this product and its uses. Designed for operations requiring up to 16,000 pounds pressure, these presses can apply uniform pressure loading throughout entire working stroke, pressure can be accurately predetermined and regulated, working stroke adjusts itself automatically to work requirement, and rate of travel of the ram can be adjusted to fit particular requirements. Multipresses are discussed in four, six and eight-ton models and in four to six-ton range for model units. New applications and accessories are developed when warranted, and inquiries are invited. Section I covers features and models, Multi-Unit Press features and standard accessories. Other sections of text are devoted to Multipress for assembling, ceramics, trimming, pelleting, coining, transfer and dye marking, blanking, drawing and forming, precious metals, plastics, straightening, fibrous products, testing. Appendix includes 81 illustrated examples of work performed and an imposing list of more than 250 Multipress users. Write for Bulletin 120.

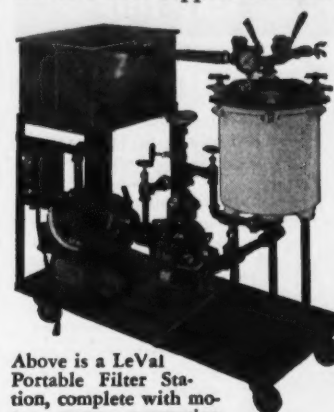
THE DENSON ENGINEERING COMPANY, Dept. CP, Columbus 16, O.

When inquiring specify CP A6076 — see handy form pages 2-3

NO BREAK-THRU

When you filter through stone!

LeVal Filters support filter-aid on rigid, porous stone.



Above is a LeVal Portable Filter Station, complete with motor, pump, precoating tank, pipes, and valves. Other styles and models range from bottling strainers to large filter units, to serve every need of the process industries.

They have no cloths or pads to break through . . . or to sag and let cloudy filtrate pass. That is why LeVal Filters provide dependable clarification at all times.

LeVal Filters leave no messy cleaning job. Turning a couple of valves backwashes the filter — flushes filter cake to the sewer.

WRITE FOR
BULLETIN F-103

for complete information
on the LeVal filtration
principle.

WHITING CORPORATION

LEVAL FILTER DEPT. District Engineers in 26 principal cities
15667 Lathrop Ave., Harvey, Illinois

When inquiring specify CP A6077 — see handy form pages 2-3

10 BIG ADVANTAGES

- ★ SURE FOOTING!
- ★ POSITIVE TRACTION!
- ★ CARRIES HEAVY LOADS!
- ★ FIREPROOF!
- ★ WITHSTANDS HARD WEAR!
- ★ DRAINS FREELY!
- ★ EASY TO CLEAN!
- ★ RETAINS APPEARANCE!
- ★ EASY TO CUT AND MATCH!
- ★ EASY TO WORK AND WELD!

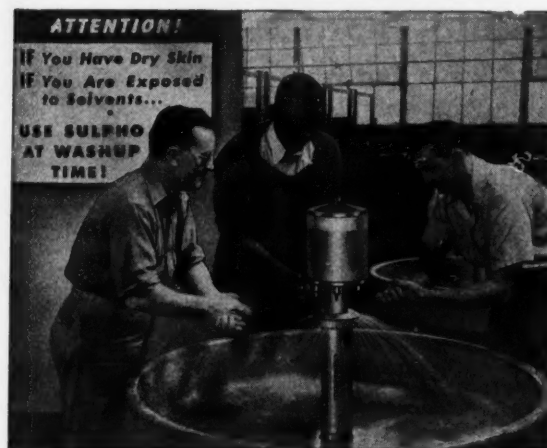
OF
INLAND
4-WAY
FLOOR
PLATE

WRITE FOR
CATALOG

INLAND STEEL COMPANY

38 S. Dearborn Street Chicago 3, Illinois
Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis, St. Paul

When inquiring specify CP A6078 — see handy form pages 2-3



SULPHO HAND CLEANER Will Not Defat the Skin

Due to the nature of Sulpho, it has an almost neutral pH. Its cost compares favorably with products of lesser efficiency.

Write for Literature

WEST Company

47 1/2 WEST ST. • LONG ISLAND CITY 1 • N. Y. • DEPT. C

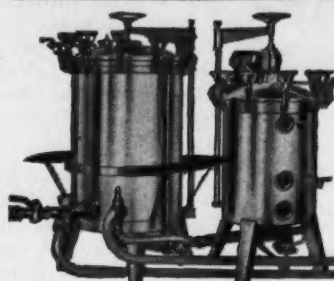


When inquiring specify CP A6074 — see handy form pages 2-3

INDUSTRIAL PLANTS
CHEMICAL PLANTS
FOOD PLANTS
Your PLANT!

THERE IS NO OTHER

Filter
LIKE THIS



**The Stainless Steel
KLEIN
IDEAL DIATOMACEOUS
EARTH FILTERS AND
SLURRY FEEDERS**

Many important and exclusive improvements and radical innovations have been incorporated in the precision-built Klein Ideal Diatomaceous Earth Filters and Feeders. Constructed of stainless-steel they utilize a new exclusive filter principle that will bring you a new high in maximum efficiency, minimum maintenance and product uniformity.

Illustrated are the radically different Klein Ideal Filter Leafs with discharge tubes that practically eliminate the danger of clogging.



ESTABLISHED 1909

KLEIN

FILTER & MANUFACTURING COMPANY
1223-29 SCHOOL STREET • CHICAGO 13, ILLINOIS

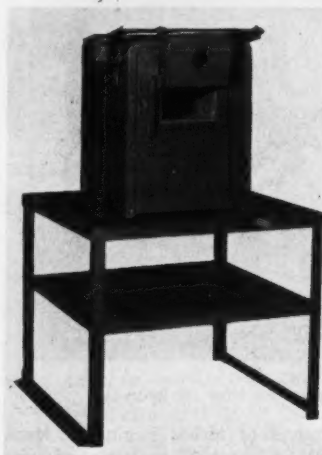
WRITE TODAY for
full information and
the latest Klein Bulletin.

When inquiring specify CP A6079 — see handy form pages 2-3

Production

Small Electric Furnaces for the Laboratory

Tool treating easily done with new equipment



Furnace Provided With New Stand

Also a heavy gauge structural steel stand of welded construction serves as a bench for the furnace, providing a

Uses — For the heat treating of tools, dies, small parts, and laboratory testing. Other operations, such as drawing, tempering, normalizing, annealing, pre-heating for high speed hardening, emergency repairs, and experimental testing may be done with facility in this oven.

Features — A counter-weighted vertically operated door is provided for use where only partial door opening to the furnace is required.

The "Inside" of Peerless Construction WHICH OFFSETS PUMP WEAR



HIGH EFFICIENCY
**DEEP WELL
TURBINE PUMPS**
OIL OR WATER LUBRICATED

Capacities: 15 to 30,000 Gals. per Min.
For wells 4" inside diameter or larger.

Another Peerless Advantage
CHROME SHAFT OVERLAY



To protect the water-lubricated turbine pump line shaft bearings from excessive wear of abrasives, Peerless builds into the line shaft special Monel sleeves at point of bearing contact, and further protects this sleeve with its patented hard chrome surface overlay—extra protection which insures long life.

This sleeve, which runs through each long resilient bearing, forms a smooth continuous surface of exact shaft diameter, minimizes frictional losses and aids in securing higher efficiency.

Learn of the many other Peerless advantages which contribute to Peerless leadership in the manufacture of both water and oil lubricated turbine pumps.

PEERLESS PUMP DIVISION

FOOD MACHINERY CORPORATION

Canton 6, Ohio • Quincy, Illinois • Los Angeles 31, California
DISTRIBUTORS IN ALL PRINCIPAL CITIES

When inquiring specify CP A6081 — see handy form pages 2-3

THE NEW ERTEL "Pneumo-Vac" VACUUM BOTTLE FILLER

FILLING SPEED MEASURED IN QUARTS—
50 BOTTLES PER MINUTE

The new Ertel "Pneumo-Vac" Vacuum Bottle Filler is designed to reduce physical effort. It is operated by a balanced foot valve which allows the operator full use of both hands. Dripping is positively prevented while unit is in operation. Liquid filling height can be accurately and quickly regulated. Fully illustrated bulletin giving floor area, bottle heights, etc., is available without obligation. Write for copy.

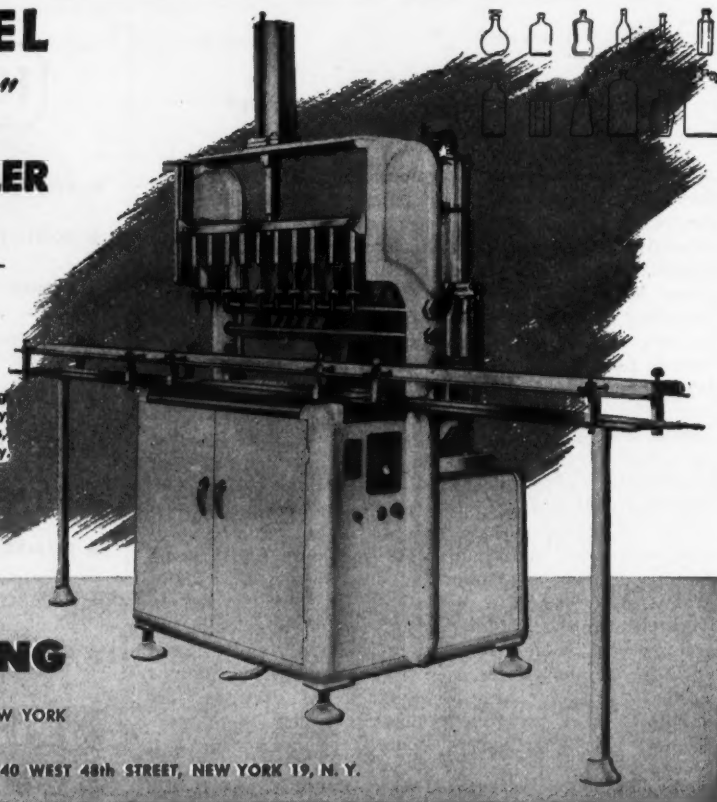


**ERTEL ENGINEERING
CORPORATION**

KINGSTON

NEW YORK

NEW YORK CITY SALES OFFICE AND SHOWROOM: 40 WEST 48th STREET, NEW YORK 19, N. Y.



When inquiring specify CP A6080 . . . see information request blank, pgs. 2-3

Liquid-Proof Work Gloves that wear and wear and wear



Stanzoils

of neoprene-impregnated canvas

● Good protection for working hands—for these Stanzoils are impregnated with extra-tough milled type neoprene (not latex), leakproof. More than that, they stand hard abrasive wear and have a grip that hangs on to objects handled, giving workers confidence and speed. No peeling from fabric. Black, comfort-fit size, knit wrist or gauntlet. Write for full facts about these cost-reducing super-service Stanzoils.

Synthetic Rubber Division



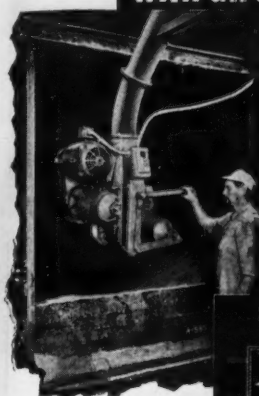
THE PIONEER RUBBER COMPANY
239 Tiffin Rd., Willard, Ohio, U. S. A.
Los Angeles

OVER 25 YEARS OF QUALITY GLOVE MAKING

When inquiring specify CP A6082 — see handy form pages 2-3

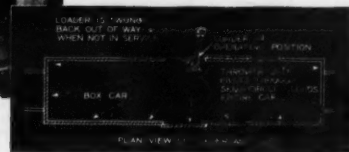
IT'S A CINCH...

**TO LOAD BOXCARS FASTER
with an S-A SWIVELoader**



Dry, bulk material (up to 2" size) can be loaded and trimmed mechanically. The centrifugal thrower unit, swung into position inside car door, discharges material to any part of car with only part-time attention of operator. Loading is completed in a fraction of the time and cost required by hand trimming.

Write for Bulletin No. 1044.



STEPHENS-ADAMSON

MFG. CO.

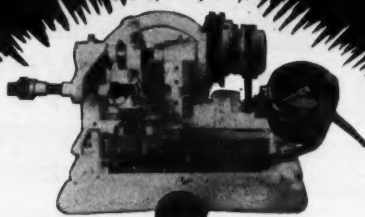
Tellev-Bin Level Controls Saco Speed Reducers Car Loaders Car Pullers Winches SealMaster Ball Bearings

11 RIDGEWAY AVE., AURORA, ILLINOIS

When inquiring specify CP A6083 — see handy form pages 2-3

WHEN YOU BUY
VAR-I-FEEDER
YOU BUY

Quality!



Quality IN DESIGN Quality IN MATERIALS
Quality IN PRODUCTION

Send for booklets VAR-I and No. 91

VAR-I-FEEDER

FOR ACCURATE CHEMICAL FEEDING

CHEMICAL WATER TREATMENT • CHLORINE DIOXIDE PROCESS
FOR TASTE AND ODOR CONTROL • HYPOCHLORINATION

CHEMICAL FEEDERS DIVISION
MORSE BOULGER DESTRUCTOR COMPANY
ROOM 1709A NEW YORK 17, N. Y.

Providence Office, 250 Auburn St., Cranston, R. I.
Representatives in all principal cities
Equipment Makers and Proportioning Engineers

When inquiring specify CP A6084 — see handy form pages 2-3

Production

shelf for storage space beneath the ample table top area. This stand has been found to be particularly desirable due to the fact that it establishes the furnace at the proper working height with the furnace hearth 42" above the floor.

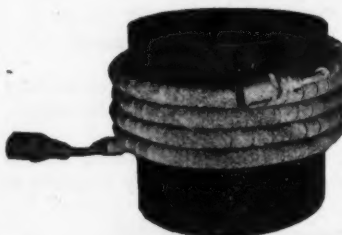
Description — These furnaces are simply constructed. The outer shell is of heavy gauge sheet steel, well insulated, and with cast iron end frames. Elements are of the imbedded type. Interlocking, rectangular elements form the interior of the chamber, and heating element replacement is a simple matter. There are no cold spots. Furnaces may be obtained with either the new vertically operated door or the bottom hinged door. Two sizes are offered. One 8 x 6 x 14 inches and the other 10 x 6 x 18 inches. Operation is at 1750° F. continuously or 1850° F. intermittently. Heating time to 1400° F. is 40 minutes, to 1850° F. the time is 55 to 65 minutes. These furnaces are usually operated with an indicating controlling pyrometer attached. Complete information is furnished interested parties.

COOLEY ELECTRIC MFG. CORP., Dept. CP, Indianapolis, Ind.

When inquiring specify CP A6085 — see handy form pages 2-3

Stress Relieving Equipment For Welded Pipe and Structural

Coils may be used to treat pipe from
2½" to 24" in diameter



Coiled wire enclosed in interlocking beads

Equipment consists of sufficient lengths of coiled nickel-chromium wire enclosed in interlocking refractory beads.



Individual interlocking refractory beads

Complete equipment includes inter-connecting cables and all necessary insulating materials and accessories.

Description — Automatic control of entire stress relief operation is contained in control panel, including automatic timing device to start and stop the stress relief cycle. Panel has large dial-type indicating and controlling potentiometer.

HAROLD E. TRENT CO., Dept. CP, 235 Leverington Ave., Philadelphia 27, Pa.

When inquiring specify CP A6086 — see handy form pages 2-3

CHEMICAL STONEWARE

its place in the
unit processes



5-HEAT EXCHANGE
General Ceramics COILS

For Cooling and Heating Corrosive Chemicals

Here's double assurance of smooth-functioning flow sheets where heat exchange processes involve corrosives:

• Chemical stoneware is corrosion-proof against all acids except hydrofluoric; it can't contaminate the products handled.

• When coils are GENERAL CERAMICS stoneware, you know they're designed by men who—in addition to being ceramists—are chemical engineers. They add to stoneware's native properties an intimate knowledge of the processes in which coils are used.

General Ceramics chemical stoneware coils are being used for the condensation (at atmospheric pressure or under vacuum) of nitric acid, muri-

atic acid, bromine and other corrosive or pharmaceutical products, for cooling or heating corrosive liquids or gases, as reflux condensers, and as heat exchangers. A special ceramic body, B-41, raises the overall heat coefficient of General Ceramics coils nearly 300% above that of standard stoneware.

General Ceramics equipment has proved itself easy to clean as a china dish, and comparatively low in first cost. Stoneware does not depreciate; no relining or servicing is required.

For particulars on General Ceramics chemical stoneware coils, write for Bulletin 176. For help in the design and selection of stoneware apparatus for any corrosive-handling process, call on General Ceramics engineers.



GENERAL CERAMICS and Stonite Corp.
Chemical Equipment Division • Kenilworth, New Jersey

When inquiring specify CP A6087 — see handy form pages 2-3

NEW CATALOGS!

FOR STEEL VALVE USERS

These New Edward Catalogs

contain dimensional data, sectional illustrations, design details, materials and many helpful suggestions in steel valve selection and operation. Be sure they are in your file.

CATALOG 12-B Non-Return Valves, globe or angle, flanged or welding ends; 300 to 1500 lb. sp.

CATALOG 12-D Blow-Off Valves, straightway or angle, flanged or welding ends; 300 to 1500 lb. sp.

CATALOG 12-E Gate Valves, cast steel flanged or welding ends, for service from 150 to 3600 lb.

A request on your company letterhead will bring the catalogs you desire.

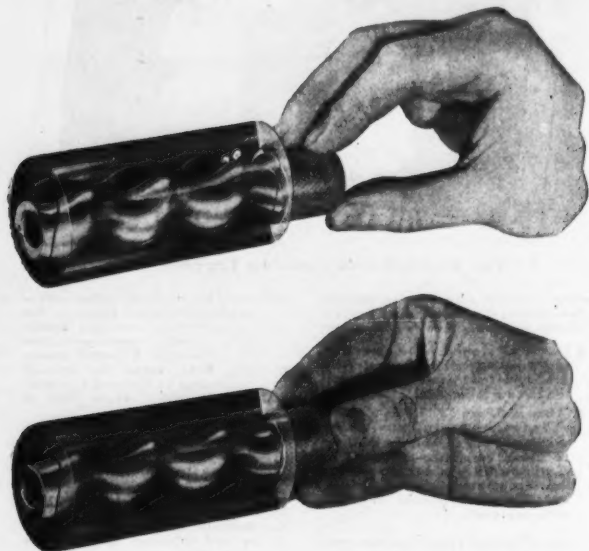
THE EDWARD VALVE & MFG. CO., INC.
1230 WEST 144th STREET
EAST CHICAGO, INDIANA



Edward Valves
Forged Steel & Cast Steel

When inquiring specify CP A6088 — see handy form pages 2-3

Like This!



The R&M MOYNO Is Simple and Sure

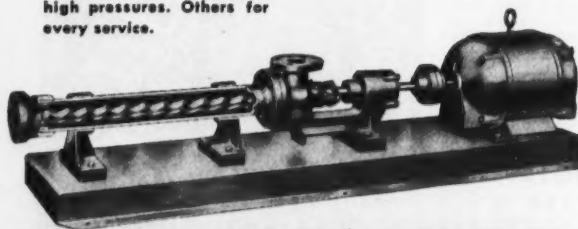
Nothing can explain the operation of the Moyno pump like a demonstration model in your own hands. You can see how voids move through the stator to create continuous flow without pulsation—how the entire rotor area and the entire inner contour of the stator work together to form progressing, ever-changing seal lines.

You can see why the R & M Moyno needs no pistons or valves for positive pressure, why turbulence is astonishingly low, why particles are passed, and how replacing just a few accessible parts restores original operating efficiency.

The Moyno is the ideal pump for abrasives, and for practically everything else that will flow through a pipe. If you have a pumping problem, here's your answer. Ask us to prove it!



Multiple-Stage, Tubular-Type Moyno for abrasives and high pressures. Others for every service.



ROBBINS & MYERS • INC.
MOYNO PUMP DIVISION • SPRINGFIELD, OHIO
HOISTS & CRANES • MACHINE DRIVES • MOTORS • FANS • FOUNDED 1878

When inquiring specify CP A6089 — see handy form pages 2-3

Production

New 4500° White Fluorescent Lamps For Industrial Use

New phosphorescent coatings and lighting performance featured

Uses — In many applications where lighting can be improved by using a colored light source "warmer" than standard 6500° day-light lamps and "cooler" than the standard 3500° white types.

Features — Lamps feature new phosphorescent coatings and are designed to operate with superior lighting performance than heretofore.

Description — Initial ratings for the new 4500° white are 50 lumens per watt for the 40 watt size and 40 lumens per watt for the 100 watt size. They are interchangeable with fluorescent lamps of the same wattage ratings now used in existing fixtures and will be distributed through the regular trade channels. Literature on the subject may be had by writing.

SYLVANIA ELECTRIC PRODUCTS, INC., Dept. CP,
Salem, Mass.

When inquiring specify CP A6090 — see handy form pages 2-3

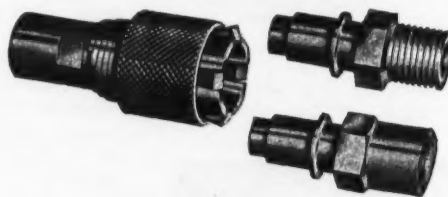
★

Air Hose Coupling Withstands 1000 Lb. Pressure

Gasket changes made in one minute — no dis-assembly of coupling body required

Uses — This is a leakproof air hose coupling for working pressures up to 1000 pounds and also will handle oxygen, oil, aromatic fuel and kerosene.

Features — In addition to providing a positive seal against leaks, the coupling has gaskets that take only a minute to



Fast connection and disconnection effect 85% time savings

change, it may be connected or disconnected in a very short time.

Description — Coupling body has $\frac{1}{4}$ inch female pipe threads and is available with or without a self sealing valve. A choice of two nipples is provided, one with $\frac{1}{4}$ inch male and the other with $\frac{1}{4}$ inch female pipe threads. Entire unit is made of solid aluminum bar stock, built to aircraft specifications. A quick pull down and push-up on a knurled ring and the coupling is connected with a safe, leak proof seal. Another quick pull of the ring disconnects the coupling instantly. Literature on the equipment may be had by writing.

E. B. WIGGINS OIL TOOL COMPANY, INC., Dept.
CP, 3424 Olympic Blvd., Los Angeles 23, Calif.

When inquiring specify CP A6091 — see handy form pages 2-3



PILE TO THE CEILING ... with the HANDIBELT

You can get more loading per square foot of floor space using the Handibelt portable conveyor — save lifting — carrying; users report 8 to 10 man hours saved and volume of items handled more than doubled. Easily wheeled about by one person. Handles boxes, bags or cartons weighing up to 135 pounds. Can be used inclined, declined or horizontal. Belt is free of side rails and reversible in movement. Operates from any ordinary lighting circuit. Available in two models: No. 11 piles up to 7 ft. 6 inches; No. 16 piles up to 10 ft. 6 inches.

Get complete information — write for Handibelt Bulletin No. CP-116.

Standard Conveyor Company

General Offices: North St. Paul 9, Minn.
Sales & Service in all principal cities



When inquiring specify CP A6092 — see handy form pages 2-3



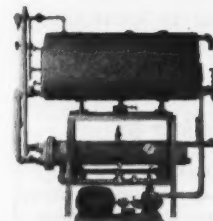
Every Pound of Steam from Your Boiler
with a

SCHAUB *Heat Reclaim* SYSTEM

SAME BOILER... SAME FUEL... MORE STEAM!

You can get extra steam from your present Boiler by stopping flash heat losses. A Schaub Heat Reclaim System saves wasted B.T.U.'s by re-using "flash" steam that ordinarily escapes from the condensate receiver vent.

This "lost heat" is transferred to the feed water on its way to the boiler and builds feed water temperatures up to 260° F. — or higher. Automatic water level and make-up are provided for. Write today for full information.



SCHAUB SYSTEMS—The Key to Boiler Room Efficiency—

FRED H. SCHAUB ENGINEERING CO., INC.

2113 South Marshall Boulevard

Chicago 23, Illinois

When inquiring specify CP A6093 — see handy form pages 2-3



Clear, flexible, chemically inert, tough, non-toxic, easily sterilized, Tygon Tubing is tops for laboratory and chemical plant use. Once you've tried it, you'll never be happy with anything else. If your dealer can't supply you, write direct: Plastics and Synthetic Division, The U. S. Stoneware Co., Akron 9, Ohio.

AT YOUR
LABORATORY
SUPPLY
DEALER

TYGON

Flexible-Plastic
TUBING

When inquiring specify CP A6094 — see handy form pages 2-3

Skilled Lighting

FOR SAFER LIGHTING

Wheeler
DUST-TIGHT
Fluorescent
Lighting Units



FOR HAZARDOUS LOCATIONS

For "Skilled Lighting"—plus safety—use Wheeler DUST-TIGHT Fluorescent Fixtures. They meet Underwriters' requirements for Class II, Group G and F, and Class III and IV Hazardous Locations. They bring 64 years of engineering experience in safe lighting to many other locations where lamps, sockets and reflecting surfaces must be protected from non-combustible dusts and vapors.

Class II-G DUST-TIGHT Units are all-steel construction. Made in two and three lamp 48", 40-watt units. Available with Water-White Plate Glass, Tempered Clear Safety Plate Glass or Double Thick Plain Clear Glass hinged, dust-tight covers.

Write for complete data sheet. Wheeler Reflector Company, 275 Congress St., Boston 10, Mass.; New York, N. Y. Representatives in principal cities.

Distributed Exclusively by Electrical Wholesalers

Wheeler

REFLECTOR
COMPANY

Lighting Equipment Specialists Since 1881

When inquiring specify CP A6095 — see handy form pages 2-3

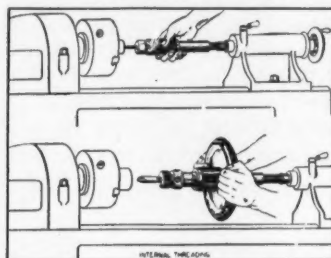
Production

High Speed Hand Tool Threads and Taps

Combines high lathe speeds with less hazard; cuts right or left

Uses — Grip-Slide threading and tapping hand tool or threading and tapping at high lathe speeds with safety to tools and operator.

Features — Speeds threading operations by permitting higher lathe speeds, eliminates hazard of projecting tap or die holder handles. Cuts either right or left hand threads. Easily operated. Prevents drag on thread being cut, as it eliminates necessity for moving tailstock back and forth when threading or tapping in lathe. Sliding movement of die or tap holder occurs on hardened, ground guide bar concentrically true with tapered shank which fits into tailstock spindle. Tap or die held in perfect alignment with work



Grip-Slide tool

in chuck of lathe by hardened, ground holder which has bore for guide bar concentric with recess in which die or tap is held. Guide bar is ring marked at 1/4" intervals for accurate duplication of thread length on parts.

Description — Grip-Slide tool is secured in tailstock spindle and tailstock moved to position where tap or die is conveniently near work. With tap or die inserted, holder is grasped and slid toward work. After thread is cut to desired length, grip is released, permitting holder to float on guide bar, instantly stopping cutting action; lathe is reversed and tool again gripped for backing off die or backing out tap. Furnished in two sizes: "Regular" for bench and small engine lathes, "Giant" for larger lathes. Regular has knurled gripping surface, external threading capacity from 2-56 to 3/8" NC on steel to thread length 3 1/2", tapping capacity 2-56 to 1/8"-18. Giant has wheel-type grip, external threading capacity from 10-32 to 1 1/8" NC and 3/4" NF to thread length of 5 1/2", tapping capacity 10-32 to 3/8"-11. Both sizes use 2 or 3-flute spiral taps.

THE THREAD MILLER CORPORATION, Dept. CP, West Orange, N. J.

When inquiring specify CP A6096 — see handy form pages 2-3

Improved production of fine and ultra-fine powders thru MECHANICAL PULVERIZATION



*—this new Book contains everything
you want to know about pulverizing.
Send for your copy today*

This valuable book—soon off the press—tells you how to produce fine and ultra-fine powders; how to test the value of fine and ultra-fine grinding right in your own laboratory or pilot plant before starting full production schedules; how to control particle size, blending and dispersing, accurately; how to select the proper mechanical pulverizer for your needs; as well as many other important facts about pulverizing.

Send for this new book today and learn why it is decidedly to your advantage to use a MIKRO-PULVERIZER or one of the new MIKRO-ATOMIZERS in your pulverizing operation.

PULVERIZING MACHINERY COMPANY

60 CHATHAM ROAD • SUMMIT, N. J.

NOW ... 2 TYPES TO MEET MOST PULVERIZING NEEDS

MIKRO-PULVERIZER

Reg. U. S. Pat. Off.

PULVERIZING MACHINERY CO., 60 Chatham Rd., Summit, N. J.

Please send me a copy of your new Book when it is ready.

Name.....Position.....

Company.....

Company Address.....

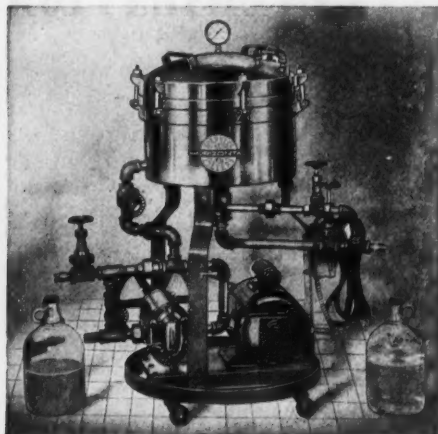
City.....State.....

Mail this coupon with your company letterhead

When inquiring specify CP A6097 — see handy form pages 2-3

NO UNFILTERED HOLDOVER

Every batch completely filtered with **SPARKLER "Horizontal Plate" FILTERS** equipped with patented Scavenger Plate (standard equipment)



Model 14-D-4 STAINLESS STEEL
Capacity 400 G.P.H.

SPARKLER MFG. CO.

243 Lake St.

Mundelein, Ill.



OTHER ADVANTAGES of Sparkler filtration

- Filtrate is always of uniformly high quality.
- Cake builds up evenly and firmly — will not crack or break off.
- Quick, easy cleaning: disposable media, simple construction.
- High Flow Rates
- Long Cycles
- Portable — Economical

Many models from small pilot plant filters to 10,000 G.P.H. capacities.

When inquiring specify CP A6098 — see handy form pages 2-3

Production

"Push-Button" Mixing Boosts Production

Provides uniformity in compounding paints, synthetics, linoleum

Uses — Motor-driven metering pumps and other automatic equipment for "pushbutton compounding." For charging Banbury and other mixers with dry or liquid ingredients. Used by manufacturers of plastics, paints, linoleum, synthetic rubber and other compounded materials.

Features — Affords increased output. Cuts operating and material handling costs. Promotes uniformity of product. Aids loss-in-weight control. Adjust-O-Feeder motor-driven metering pumps automatically add any number of desired ingredients in any desired sequence at any predetermined interval. Will repeat deliveries for each new batch, in exact duplicate.

Description — Wide variety and combination of sizes permits selection of the right unit for the most economical job. Complete information on request.

PROPORTIONERS, INC., Dept. CP, 41 Coddling St., Providence 1, R. I.

When inquiring specify CP A6099 — see handy form pages 2-3

ARE U SHAPED BOX CONVEYORS justifying THEIR UPKEEP in YOUR PLANT?

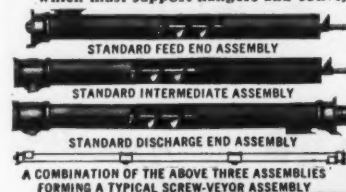
Let HAMMOND Screw-Veyor

WITH ITS *Dust-tight, moisture-proof tubular construction*

SHOW YOU THE WAY TO NEW EFFICIENCIES! It's Modern!

"Hammond" Screw-Veyor removes the excess area that prevails with "U" Shaped conveyor box systems. It requires minimum space, is always in perfect alignment, runs noiselessly and reduces accident and fire hazards . . . affording the greatest efficiency in the conveying of free flowing bulk materials.

Screw-Veyor is manufactured in assemblies consisting of a feed end — any number of intermediates and a discharge end, joined together by means of patented slip couplings and hanger supports with inspection ports. The steel tubing is not required to carry any structural load. It only carries the material. Precision alignment is a "built-in" feature, not possible with "U" shaped boxed conveyor which must support hangers and conveyors.



Screw-Veyor gives you a cleaner, accessible system with less chance for infestation. Any section can be removed without disturbing the others. Installation costs and maintenance costs are also less.

Write for Form No. M-600-2

Screw Conveyor Corporation
699 HOFFMAN ST. HAMMOND, IND.
ENGINEERS MANUFACTURERS
TRADE MARK REG. U.S. PAT. OFFICE

When inquiring specify CP A6101 — see handy form pages 2-3

NEED MIXERS? Try the *New Multi Mixer* Employing the Special Multiplex Paddle Principle which assures high production at low cost . . .



Designed by men with mixer "know-how", the new Multi Mixer produces a uniformly good mix at a very low cost. High production is achieved by the unique Multiplex paddle arrangement.

Available with sealed covers and with V-belt or direct motor drives, Multi Mixers are being used by many processing plants (rubber, ceramic, chemical, alloy, test blending of powders, and others). The Multi Mixer is the answer to your quest for an inexpensive but sturdy mixer.

Write for further information

THE MULTIPLEX CONCRETE MACHINERY CO.
ELMORE, OHIO

30 to 60 cubic feet capacity. Open or closed type cover. Discharge arranged to suit conditions.

When inquiring specify CP A6100 . . . see information request blank, pgs. 2-3

Just Completed!

One of the **LARGEST SYNTHETIC HCl UNITS** IN THE COUNTRY!

The unit was designed by Amersil's Engineering Department. All silica ware used was manufactured in Amersil's own American plant to specifications necessary to produce the required quality and quantity of throughput. Necessary auxiliary equipment to complete the unit, so as to assure the results guaranteed by Amersil, were selected and purchased by our Engineering Service Department.

This integrated design and manufacturing service is available to chemical and metallurgical plants whose processes involve extreme temperatures and highly corrosive operating conditions.

60 TON PLANT

2½ TONS OF 22° B° ACID AN HOUR ON A 24 HOUR BASIS

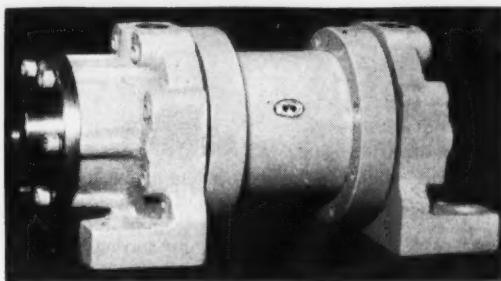
AMERSIL COMPANY Inc.
ENGELHARD
CHESTNUT AVENUE HILLSIDE 5, N. J.

When inquiring specify CP A6102 — see handy form pages 2-3

Production

Hydraulic Cylinders Are Non-Rotating

Line includes 1-1/2 to 8" diameters, pressure ring replacing tie rods



Non-rotating hydraulic cylinder mounting

Uses — Non-rotating hydraulic cylinders for use in hydraulic clamping and lifting devices, for horizontal motions, processing machinery, or wherever reciprocating motion is desired from operation of hydraulic cylinders.

Features — Pressure ring replacing tie rods; cushioned cylinders with no increase in overall length; two-way action; ports from bottom or any side; simple design; extra sturdy construction; one-piece piston rings; high safety factor.

Description — Complete line includes sizes from 1 1/2" to 8" in diameter, any length stroke, pressures up to 3000 psi and seven standard mountings. Manufacturer also carries complete line of air cylinders. New hydraulic catalog giving details, design, dimensions, photographs, sectional drawings and engineering charts will be mailed on request.

POWER PLUS PRODUCTS COMPANY, DIVISION OF NEPTUNE PRODUCTS COMPANY, Dept. CP, 2228 Bellevue Ave., Detroit 7, Mich.

When inquiring specify CP A6103 — see handy form pages 2-3

★

Blades Slice Glazed Tile, Chrome, Magnesite, Concrete and Masonry

Sizes ranges 7 — 18 inches, all textures

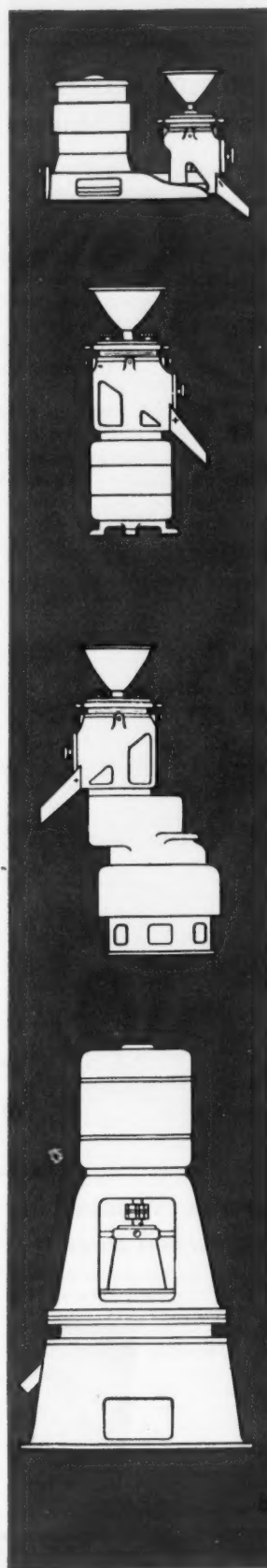
Uses — For cutting all types of brick, glazed tile and terra cotta, fire brick, basic refractories such as chrome, magnesite and materials encased in steel, also concrete products and other masonry materials. For salvaging obsolete stocks or damaged materials.

Features — Bodies of identical-appearing materials may be as different as black and white. Wide variety of blade textures suited to masonry materials of specific density. Factory tested. Steel centers protect blade shaft. Pre-attached blotters designed for special flange of Clipper masonry saws cemented to each side of blade for safety and time saving. Cut at fast speeds. Laboratory tests conducted without charge. Special size or shape arbors on request.

Description — Packaged six to a carton, 12 cartons per case. Sizes 7-9, 10-12, 14-16 and 18 inches. Write for folder No. 70.

THE CLIPPER MANUFACTURING COMPANY, Dept. CP, 2800 Warwick, Kansas City 8, Mo.

When inquiring specify CP A6104 — see handy form pages 2-3



COLLOID MILLS

- **Dispersing** solids in liquids or liquids in liquids, Premier insures more finely divided colloidal suspensions and promotes immediate chemical reaction.
- **Disintegrating** solid particles or the fibre and cellulose in animal or vegetable tissue — instantly exposing these particles to the wetting or extractive action of the suspending liquid.
- **Emulsifying** — achieving non-separating emulsions of all viscosities.
- **Homogenizing** assuring superior homogenized products by compelling uniform distribution of the dispersed phase throughout the mix.

CLIP COUPON BELOW FOR INFORMATION ON YOUR PROBLEM

PREMIER MILL CORPORATION
3218 Genesee Street, Geneva, N. Y.

SEND DESCRIPTIVE CATALOG

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

PREMIER

better products —
more profitably produced

When inquiring specify CP A6105 . . . see information request blank, pgs. 2-3

NIAGARA Aero Cooling Does It Better!

And Saves Cooling Water Costs

Close Temperature Control in Cooling Fluids

NIAGARA Aero Heat Exchanger cools liquids or gases to 10° of atmospheric wet bulb temperature and holds to tolerances of 2° F.

Compressed Air After Cooling

Furnishes drier compressed air—eliminates half the moisture allowed by conventional after-cooling methods.

Holding Quenching Baths to Temperature

Heat treaters increase production, improve quality, decrease rejections by using NIAGARA Aero Heat Exchanger to control quenching bath temperatures.

Condensing Refrigerant Gases

NIAGARA Aero-Pass Condenser increases refrigerating plant capacity, saves power. Duo-Pass prevents scaling and clogging of condenser. "Oilout" cleans the oil out of the refrigerating system.

NIAGARA AERO HEAT EXCHANGER is used in liquid cooling in industrial and chemical processes, water jacket cooling, hydraulic fluid, transformer oil, lubricating and cutting oil cooling, vapor and steam condensing.

NIAGARA BLOWER COMPANY

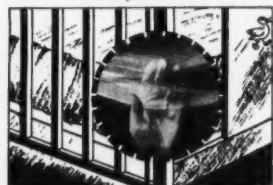
Over 30 Years of Service in Industrial Air Engineering
Dept. CP-116, 405 Lexington Ave., NEW YORK 17, N. Y.
Field Engineering Offices in Principal Cities

When inquiring specify CP A6106 — see handy form pages 2-3

Clarvan seals sheet plastics

Let me say first that when we speak of the Thermatron electronic welder, we do so with conviction and pride. We feel that this machine of yours represents the outstanding development in the flexible plastic field.

with
Thermatron



Plasticoid Crib Sheet with corners electronically welded with THERMATRON. "Ideal construction for perfect fit," says Clarvan. "Durability far superior to any other design."

Actual excerpt, letter from
Clarvan Corporation, Milwaukee



100% water-proof, air-tight plastic mitten-liner, THERMATRON—sealed by Clarvan. "Enthusiastically received... constantly increasing sales," Clarvan reports. Electronically welded seams eliminate stitches, add strength.

Investigate THERMATRON. You can make seams in plastic products strong as the material itself. You can increase product's tensile strength, eliminate stitching, adhesives, solvents. You can open up possibilities for hundreds of new profit-making plastic specialties...with THERMATRON. Write on your letterhead for your free copy of "Electronic Heating and Sealing With the Thermatron." This 8-page bulletin illustrates and describes in detail THERMATRON industrial electronic heat generators for sealing and preheating. Address Dept. T-25

Thermatron DIVISION

RADIO RECEPTOR CO., INC.

Since 1922 in Radio and Electronics
251 W. 19th Street, New York 11, N. Y.
Midwest Sales and Service: Zephyr Electronics, Chicago

*Reg
Trade
Mark

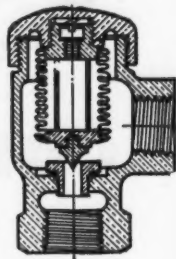


When inquiring specify CP A6107 — see handy form pages 2-3

Production

Designs "Baby" Steam Trap For Urn, Sterilizer, Water Still Makers

13-oz., 2-5/8" high unit can be used as compact,
high pressure thermostatic air vent



Ultra-small steam trap

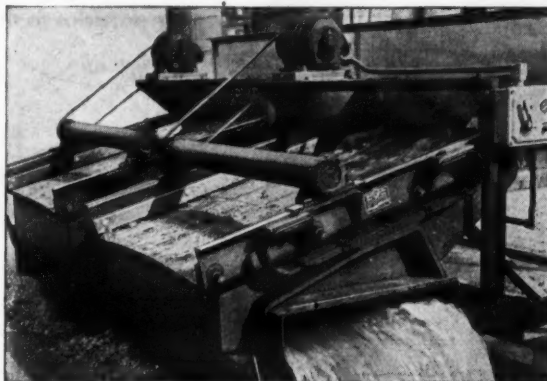
Uses — Ultra-small, thermostatic steam trap, designed especially for manufacturers of instrument sterilizers, water stills, plate warmers, coffee urns and other steam heated equipment. Can also be used as a compact, high pressure thermostatic air vent.

Features — Compact. Weighs only 13 ozs. Equipped with Sarco helically corrugated bronze bellows, brass body, renewable valve head and seat of stainless steel. Maximum operating pressure 100 psi.

Description — Sarco No. 10. Trap measures 25/8" high, overall height; 1" center to face of inlet, with connections 1/4" or 3/8" IPS.

SARCO COMPANY, INC., Dept. CP, 475 Fifth Ave., New York 17, N. Y.

When inquiring specify CP A6108 — see handy form pages 2-3



Save Foods Otherwise Wasted...

This L-B Vibrating Screen Does It

The dual screen unit pictured reclaims tomato pulp, beans and peas formerly wasted. Now they are valuable by-products—feed and fertilizer. This user has 10 screens in service... similar screens, of various metals and meshes, are separating solids and liquids in many kinds of plants—reducing stream pollution and creating profits for alert processors. Why not investigate?

LINK-BELT COMPANY

2045 West Hunting Park Ave., Philadelphia 40
Offices in principal cities



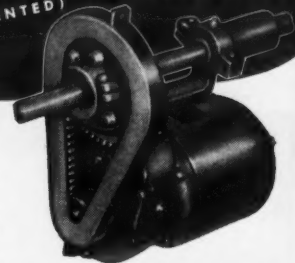
WRITE FOR
BOOK NO. 1977

LINK-BELT Vibrating SCREENS

When inquiring specify CP A6109 — see handy form pages 2-3

ELECTRIC POWER TRAVEL FOR HAND TRAVELED OVERHEAD CRANES GET A **NORTHERN TRAVELATOR**

(PATENTED)



Chain pulling is out of date—it is too slow—costs too much—is inconvenient. A Northern Travelator quickly changes your old overhead hand traveled crane to modern electric power travel.

It is inexpensive—costs less than you are paying for pulling a chain. Installation is easy—any good mechanic can put it up in less than half a day.

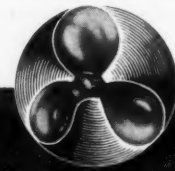
Just push a button to operate—YOU DON'T NEED PULL.

Workmen like the Travelator—it does away with a weary, back breaking job. WRITE FOR BULLETIN T-11

2198

NORTHERN ENGINEERING WORKS
2615 Atwater Street, DETROIT 7, MICH.
Offices in Principal Cities

When inquiring specify CP A6110 — see handy form pages 2-3



Smooth Vibrationless **MICHIGAN** MACHINED-PITCH **PROPELLERS** for MIXING or AGITATION

For replacement or original equipment. Perfectly balanced to avoid whip and strain on equipment. Wide range of sizes and metals in 2 and 3 blade models. Free consultative engineering service. Write for details.



MICHIGAN WHEEL CO.
GRAND RAPIDS 3, MICHIGAN

When inquiring specify CP A6111 — see handy form pages 2-3

**"FIT THE HEAT
to your process!"**



CHROMALOX Electric HEATERS

INCREASE EFFICIENCY • REDUCE COSTS

Easy-to-install CHROMALOX Heaters—in many types and capacities—are used to heat gases and liquids . . . to heat platens, dies and molds . . . for other applications where you need fast, economical and easy-to-control heat. For details request idea-filled "100 Ways to Apply Electric Heat" booklet and Catalog 42. Save time, money and labor with CHROMALOX Electric Heat!



EDWIN L. WIEGAND COMPANY, 7517 THOMAS BOULEVARD, PITTSBURGH 8, PA.

CHROMALOX IB-47
ELECTRIC HEAT FOR MODERN INDUSTRY

When inquiring specify CP A6112 — see handy form pages 2-3

*Here's a Unit Heater
that will withstand
high corrosive fumes
and high steam
pressures*



GRID UNIT HEATER

**HERE'S
WHY**

- One piece construction heating sections (patented) of high test cast iron that will withstand steam pressures up to 250 lbs.
- No soldered, brazed, welded or expanded connections to become loose or develop leaks.
- No electrolysis to cause corrosion, breakdowns, leaks or heating failures. That's why GRID Unit Heaters withstand the corrosive fumes of HCL and CL₂ and operate efficiently for 8 or 10 years without maintenance.

New booklet "Corrosion in Unit Heaters" contains information you should know before you install unit heaters.

SEND It's free upon request. Send for it today.

**HIGH TEST
CAST
IRON
HEATING
SECTIONS**

D. J. MURRAY MANUFACTURING CO.
WAUSAU, WISCONSIN

When inquiring specify CP A6113 — see handy form pages 2-3

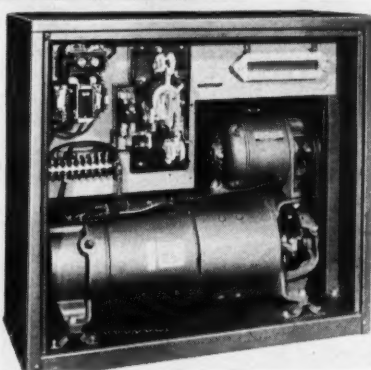
Production

Adjustable Speed Machinery Drive Has Operating Range to 1:20

*Operates electrically or electronically
at stepless speeds; unit is highly
flexible*

Uses — Compact, adjustable speed machinery drive for operation from AC circuits to provide, electrically or electronically, operating speed range up to 1:20.

Features — Stepless speeds throughout range, with rapid acceleration or deceleration at rates which may be preset. Low



Adjustable speed drive

speeds and jogging for threading and setting-up operations. Dynamic or regenerative braking. All functions are electrical, giving sensitive operator control, and master control stations with push buttons, or individual control stations, can be located wherever needed. Flexibility further enhanced by location of power units wherever convenient. Simple conduit line handles circuit between factory-wired power units, control stations and driving motors. A whole range of driving motors may be synchronized at one speed or operated with some motors rotating at a fixed ratio of line speed. Drive is available from one to 200 hp. Single power unit may be used to operate any number of driving motors within its rated capacity. Filtered air keeps cabinet interior under sufficient pressure to exclude dirt, permits placing unit in mill or factory directly beside machinery it is to serve.

Description — Reliance V-S drive. Rotating equipment and its enclosure, together with all controls, is horizontally mounted in a pressure-ventilated steel cabinet.

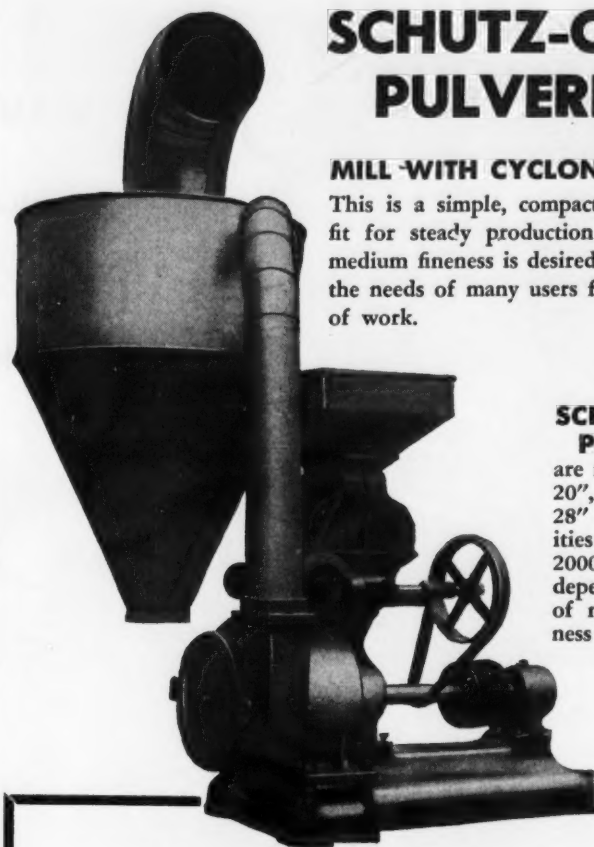
THE RELIANCE ELECTRIC & ENGINEERING CO., Dept. CP, Cleveland, O.

When inquiring specify CP A6114
— see handy form pages 2-3

SCHUTZ-O'NEILL PULVERIZERS

MILL WITH CYCLONE COLLECTOR

This is a simple, compact, economical outfit for steady production where coarse or medium fineness is desired. It amply serves the needs of many users for a great variety of work.



SCHUTZ-O'NEILL PULVERIZERS

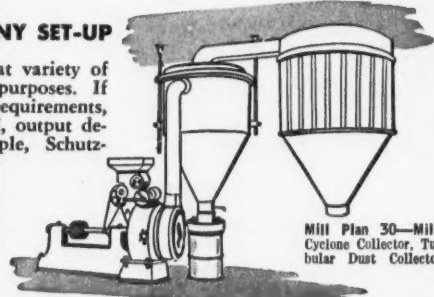
are made in 12", 16", 20", 22", 24", and 28" sizes, with capacities ranging up to 2000 lbs. per hour, depending upon kind of material and fineness desired.

For Fast, Fine Grinding of DRY CHEMICALS and Allied Products

For general use in pulverizing a great variety of dry chemicals, drugs, colors, gums, glues, or any dry, non-gritty stock, the Schutz-O'Neill Pulverizers are unexcelled. The principle of centrifugal air force impact is fast, produces a uniform product, and will maintain relatively high outputs for superfine grinding up to 400 mesh. For products with high moisture or oil content, Schutz-O'Neill also has efficient and proven equipment.

MILL PLANS FOR ANY SET-UP

Schutz-O'Neill has a great variety of Mill Plans for different purposes. If you will write us your requirements, products to be pulverized, output desired, and send a sample, Schutz-O'Neill engineers will recommend the correct size and type of mill and the most efficient Mill Plan for your use. This in no way obligates you. Literature on request.



Mill Plan 30—Mill,
Cyclone Collector, Tubular
Dust Collector



SCHUTZ-O'NEILL CO. DIVISION OF PARTEN MACHINERY CO.

PULVERIZERS • BREAKER MILLS • ROLLER MILLS • RUMM MILLS • HAMMER MILLS
303 SIXTH AVENUE SOUTH • MINNEAPOLIS 15, MINNESOTA

When inquiring specify CP A6115 — see handy form pages 2-3

SW

STRUTHERS WELLS

TRIPLE EFFECT

WATER EVAPORATOR

FOR MAKE UP BOILER FEED



STRUTHERS WELLS Triple Effect Water Evaporator, installed in one of the largest steam engines of the United States Navy, to provide a reliable and economical source of pure boiler feedwater.

● Designed to operate on either fresh water or sea water feed, with provision for thermal descaling of tubes, and arranged to permit continued operation with one or more effects cut out, this installation has a normal rated capacity in excess of 100,000 gallons per day of pure distilled water.

In the modern power plant, STRUTHERS WELLS make-up evaporators provide sound basic design together with tried and proven improvements which assure a maximum of performance and a minimum of maintenance, making them fitting companions for STRUTHERS WELLS Feedwater Heaters.

STRUTHERS WELLS CORPORATION

PROCESS EQUIPMENT DIVISION • WARREN, PENNA.
PLANTS AT WARREN, PENNA. AND TITUSVILLE, PENNA.

Production

Rotating Pan-Type Mixer Reduces Operating and Maintenance Costs

Assures thoroughly mixed uniform batches and clean complete emptying of mixing pan

Uses — Developed for the candy, drug, chemical and food industries. Besides mixing and blending, this machine is used for coating, coloring, tumbling, polishing, and finishing on candies, tablets, candy-coated chewing gums, and pills.

Features — Rotating pan is motor-tilted and motor rotated at constant speed, but a variable speed drive can be furnished where the materials to be handled require it. With a 135° tilting range, materials are completely and cleanly discharged from the rotating pan. Safety limit switches are installed at the two extreme ends of the tilting range. Operation of the unit is by push button control.

Description — All metal construction is employed with joints welded and ground smooth. For mixing and blending two or more ingredients, mixing blades are added as are necessary to assure thoroughly mixed, uniform batches. Sizes are up to 2500 pounds (50 cu. ft.) batch capacity. Literature is sent on request.

RANSOME MACHINERY COMPANY, Dept. CP, 1414 S. Second St., Dunellen, N. J.

When inquiring specify CP A6117 — see handy form pages 2-3

★

Solenoids Pose Problems of Space, Power, Mounting and Linkage

Solenoids should be "designed into" your product like other essential components. This, and the adaptability of "Stellite"-welded Solenoids to multiple uses, is the theme of a 20-page catalog, complete with blueprints, photographs and specifications. Solenoids are used to: actuate clutches, operate switches, control machines, fire guns, operate safety devices, eject work in process, move levers, operate valves, vibrate cutting knives, open and close doors and hoppers, hold chucks, sort inspected parts, and for clamping devices. Specific examples are given. Materials and construction used in "Stellite"-welded solenoid design are discussed, including coil, armature and plunger, sizes and capacities, current, efficiency and other factors. Typical solenoid mountings, and blueprints and specifications of several standard pull type, push type and push-pull type "Stellite"-welded solenoids, are included. Brief mention is made of several other useful products of the manufacturer. Write for Bulletin EM-46.

THE NATIONAL ACME COMPANY, Dept. CP, Electrical Manufacturing Division, 170 East 131st St., Cleveland 8, Ohio.

When inquiring specify CP A6118 — see handy form pages 2-3

When inquiring specify CP A6116 . . . see information request blank, pgs. 2-3



COMPLETE PENETRATION to Root of Butt Welded Joints*

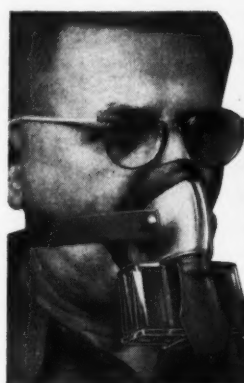
Controlled, Two-Stage Welding by the Westport Method now provides maximum bondage and strength at butt welded pipe joints, without "over-welding," which causes protrusion of weld metal on the inside of the pipe. The patented Westport Method assures a pipe contour smoother on the inside than on the outside, without the use of backing rings, which themselves have many disadvantages. . . . Our bulletin "Something New in Welding" tells the complete story. Write for it today. And remember, while our shop pre-fabricated piping can be made with any type of joint, we believe you'll prefer and specify the Westport, after you read our bulletin.

WESTPORT JOINT

W. K. MITCHELL & CO., INC.
2946 ELLSWORTH STREET
PHILADELPHIA 48, PA.

PIPING FABRICATORS AND CONTRACTORS

When inquiring specify CP A6119 — see handy form pages 2-3



NEW COMFORT...
NEW UTILITY!

THE NEW M-S-A

Clear-Vue

U.S. BUREAU OF MINES
APPROVED

The popular Dustfoe Respirator—outstanding in All-Dusts respiratory protection throughout industry—now features Bright Aluminum Facepiece, formable for individual fit . . .

Transparent Filter Container, showing type and condition of filter at a glance . . . Large, Resilient Face Cushion, soft and flexible for easy dust-tight seal . . . Finer Appearance, with light grey headband and exhalation valve. Write for Bulletin CM-7, and a ready demonstration!

MINE SAFETY APPLIANCES CO.

BRADDOCK, THOMAS AND MEADE STREETS
PITTSBURGH 8, PA.

DISTRICT REPRESENTATIVES IN PRINCIPAL CITIES

When inquiring specify CP A6120 — see handy form pages 2-3

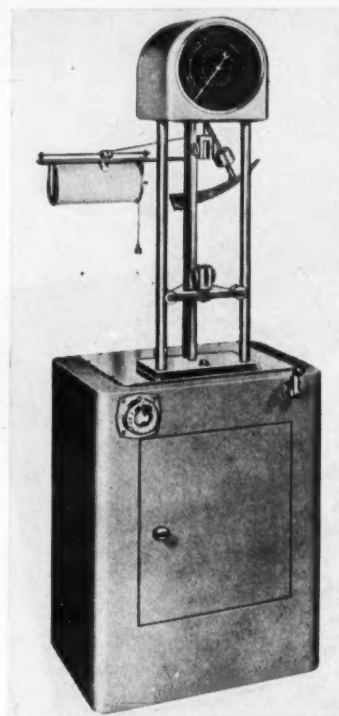
Production

Low-Range Tester Has Stepless Lower Grip, Four Capacities

0-10, 25, 50, 100 lbs. in 1-2-4-8 ozs.;
continuously variable 0-19" per min.

Uses — For physical testing of light raw materials and small finished production items.

Features — Has four separate capacities, available instantly and shown individual-



Dillon low range tester

ly, on large dial. Lower grip travel is continuously variable, or stepless, from 0" to 19" per min. Accuracy: 1/2 of 1%. Pendulum action, max. load reading, featherweight and swiveled upper grip, stroke limiting switches, forward-reverse switch, elongation gauge, stress-strain recorder, etc. Priced within range of both small and large shops and laboratories.

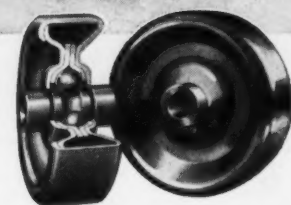
Description — Ranges are: 0-10 lbs. in 1-oz. dial divisions; 0-25 lbs. in 2 ozs.; 0-50 lbs. in 4 ozs.; 0-100 lbs. in 8 ozs. Overall height: 63". Net weight: 162 lbs. Companion tester to the Dillon Model K, for high capacity.

W. C. DILLON & COMPANY, INC.,
Dept. CP, 5410 W. Harrison St., Chicago 44, Ill.

When inquiring specify CP A6121
— see handy form pages 2-3



WHEELS DESIGNED FOR SUPERIOR PERFORMANCE



Exclusive wheel design, specially engineered for Rapid-Wheel gravity conveyors, guarantees longer operating life . . . offers a superior performance under many severe conditions.

Tests prove that the Rapids-Standard No. 11 recessed-hub conveyor wheels that are grease-packed on assembly are less vulnerable to corrosion, are longer-lived . . . give more efficient service. These tests compared the special Rapids-Standard grease-packed wheels with ordinary wheels that had no lubrication.

Both wheels were placed in a testing machine and were run intermittently for sixty-one hours; sixteen hours in operation, idle for eight hours. The wheels were sprayed with salt solution before and after each operation. After the test both wheels were cut open and examined. The ordinary greaseless wheels were seriously corroded while the special, lubricated wheels functioned normally . . . both the interior and exterior were in excellent condition.

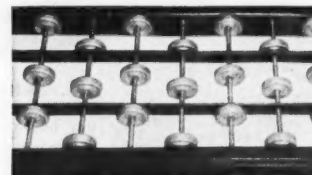
Further life-tests with over-load on the wheels show the grease-packed wheel has 2 1/2 times longer operating life.

All Rapid-Wheel portable, gravity conveyors are equipped with these special wheels. This, plus their many other features, give you efficient, economical service . . . helps you cut costly man-handling operations . . . increases production.

Check the facts. Send for a free Bulletin today!

A MODEL FOR EVERY NEED

RAPID-WHEEL CONVEYOR SPECIFICATIONS



Model No.	Width	Rated Capacity		
		Wheels per foot	(Lbs. per 10 foot section)	Weight per foot
12-RS-12	12"	12	600	7.8
12-RS-10	12"	10	550	7.5
12-RS-8	12"	8	500	7.1
12-RS-6	12"	6	450	6.7
18-RS-18	18"	18	750	9.8
18-RS-16	18"	16	700	9.4
18-RS-14	18"	14	650	9.0
18-RS-12	18"	12	600	8.6

OFFICES IN PRINCIPAL CITIES



Manufacturers of
STEEL FORGED CASTERS • TRUCKS • CONVEYORS • POWER BOOSTERS

The Rapids-Standard Co., Inc.

Sales Division—350 Peoples National Bank Bldg., Grand Rapids 2, Michigan

When inquiring specify CP A6122 — see handy form pages 2-3

A new kind of

Fitting



—A complete line, including ELLS—
TEES—CROSSES—
RETURN BENDS—"Y's"—
—LATERALS—FERRULES—
—REDUCERS—
ADAPTERS

... TRI-CLOVER Conical End Fittings

—a new kind of fitting, bringing even greater benefits from the use of light-gauge tubing, for chemical process industry applications where conveying lines require corrosion-resistant properties.

Fittings are fabricated from type 316 stainless steel. Line connections are made with simple, leak-tight flanged couplings (as illustrated)—designed for working pressures up to 250 lbs. per sq. in. Adapters permit use of TRI-CLOVER fittings with a variety of other types, including IPS fittings, conical glass tubing, and welding fittings.

Available for commercial tolerance stainless steel tubing having outside diameters of 1, 1½, 2, 2½, 3 and 4 inches.

*for Stainless Steel
light-gauge tubing...*
**CORROSION-RESISTANT
QUICKLY INSTALLED
LOWER COST
LESS FRICTION
LEAK-TIGHT
SIMPLE UNIONS
READILY ADAPTABLE
TO OTHER FITTINGS**



INDUSTRIAL PUMPS
TRI-CLOVER CENTRIFUGAL PUMPS are built to handle clear liquids, heavy liquids and semi-solids of all types, for general industrial use where corrosion-resistant properties are required.

See your Jobber or write for further details

TRI-CLOVER MACHINE CO.

Kenosha • Wisconsin

**TRIALLOY AND STAINLESS STEEL SANITARY
FITTINGS, VALVES, PUMPS, TUBING, SPECIALTIES
FABRICATED STAINLESS STEEL INDUSTRIAL FITTINGS**



The Complete Line

When inquiring specify CP A6123 . . . see information request blank, pgs. 2-3

Production

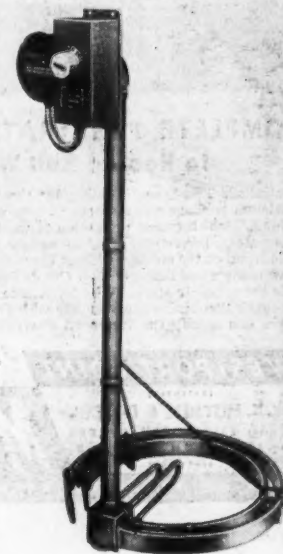
Electric Immersion Heater Eliminates Cold Areas

Heater can be controlled by means of a 3 heat switch mounted directly on terminal box

Uses — Designed for melting solid oil, greases and similar compounds in standard 55 gallon drums and similar containers.

Features — Cold areas are eliminated which might cause the heater to tip over or leave unmelted masses of material.

Description — Heater melts its way down through the contents to be melted. Rigid construction is realized through use of steel braces welded to the steel riser through which the electrical connections are brought out to a standard conduit box. The heater can be controlled by means of a three-heat switch or thermostat mounted directly on the terminal box. Unit is available for 115 or 230 volt single phase current in ratings up to 4400 watts. Additional information is obtainable.



Steel sheathed heating elements form almost complete circle around tubular unit in center

EDWIN L. WIEGAND COMPANY, Dept. CP, 7517 Thomas Boulevard, Pittsburgh 8, Pa.

When inquiring specify CP A6124—see handy form pages 2-3

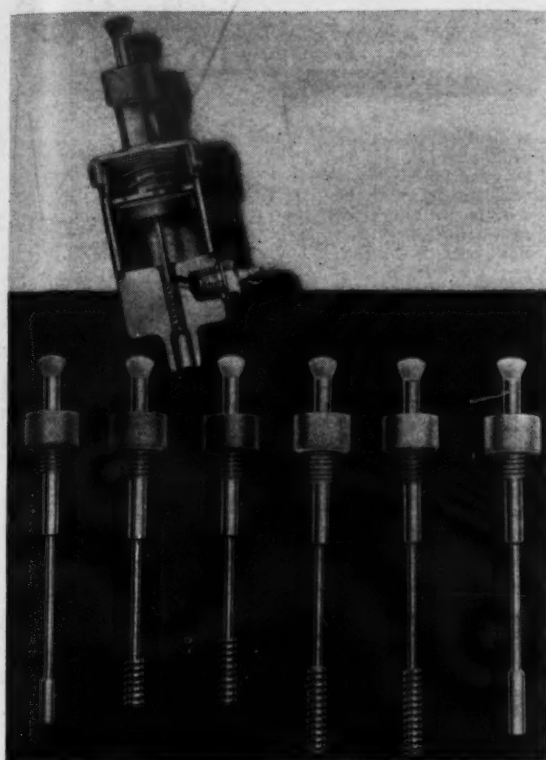
Lubricators Automatically Dispense Grease or Oil

Device feeds precise amounts of lubricant

Uses — To provide adequate lubrication of bearings in a wide variety of applications.

Features — Pressure filled lubricators automatically dispense oil or grease in a measured uniform flow to a moving bearing, and stop feeding lubricant when the bearing is not in motion. This assures controlled lubrication at all times. Labor savings are effected since the time between refilling is extended considerably as compared to conventional pressure fitting or grease cup methods.

Description — Designed in four sizes, with lubricant capacities of ½ to 8 ounces, these lubricators provide a wide range of capacities. Six interchangeable valves are available with distinctive colored caps for identification purposes. These six valves provide a means of exerting varying degrees of control of feed on greases of different densities. In operation the lubricator is filled through the fitting as indicated in the illustration. The spring, working on the small piston exerts its force to feed the lubricant into



Six interchangeable valves provide various lubricant feed rates the bearing. More information on Gun-Fil Lubricators and other lubricating equipment is available on request.

GRAY CO., INC., Dept. CP, 60 — 11th Ave., N.E., Minneapolis 13, Minn.

When inquiring specify CP A6125 — see handy form pages 2-3

★

"The Engineer at Law" Offers Practical Legal Information

Lawsuits are usually unpleasant experiences. Practical information for engineers wishing to avoid such experiences is contained in two helpful volumes, "The Engineer at Law — A Resume of Modern Engineering Jurisprudence" (Conde B. and John R. McCullough). Volume I gives comprehensive background and bird's-eye view of law in general, not only for engineers but for laymen. More specific advice for the engineer is included in chapters dealing with contracts, engineering specifications and torts incident to engineering operations. Volume II contains 442 pages of applied information concerning engineering problems such as those encountered in dairies, dye, food and soap plants. Bidding blanks, plans, specifications and construction contracts, thoroughly discussed. Chapters deal with employment relations; the engineer in trial work as technical witness, counsellor or assistant; patents, copyrights and trade marks; corporations, public utilities and carriers; administrative law; the Law of Sales; text of the Uniform Sales Act; negotiable instruments; pleading and procedure, with rules of civil procedure for the District Court of the United States. Price: \$3 per volume, \$6 per set. Mail remittance to publisher, listed below. Do not mail remittance to this magazine.

THE IOWA STATE COLLEGE PRESS, Dept. CP, Ames, Ia.

When inquiring specify CP A6126 — see handy form pages 2-3

NOVEMBER-DECEMBER, 1946



THE FINEST

Precision Stainless Pump

**FOR THE
PROCESSING
INDUSTRIES**



•FLOW-MASTER "Commander" 500-4000 G. P. H. Against Head Pressures Up To 1,000 psi. Automatic Wear Control Device Compensates For Normal Lateral Wear. Side Manual Adjustment Compensates For Normal Peripheral Wear.

Catalog 25-A Contains Specifications, Engineering Data, Prices.

**FLOW-MASTER Pumps—Homogenizers
Kom-Bi-Nators
Equipment For The Process Industries**

MARCO COMPANY Inc. Wilmington 50, Del.

When inquiring specify CP A6127 . . . see information request blank, pgs. 2-3

Plan
greater safety & efficiency
into your new buildings with
Swartwout
Controlled Air Circulation



➔ **DEPENDABLE SWARTWOUT VENTILATION**
assures removal of impure air—improves
employee comfort and helps production.

In planning new buildings, and in remodelling present structures, it's wise to plan for completely satisfactory ventilation—ample number of air changes per minute achieved by efficient expulsion of bad air and proper supply of fresh air.

Varying problems in different departments are readily met by Swartwout engineers with their recommendations for roof ventilator types best suited to the needs; and with provision for adequate fresh air intake through modern Swartwout Louvers.

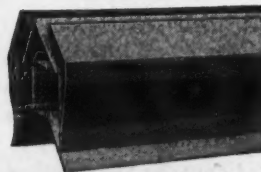
Swartwout builds sturdy, scientifically designed ventilators for either gravity or power air movement. They can be included in original plans or can be added to almost any roof, even on old buildings . . . without expensive alterations. Far-thinking plant executives figure ventilation an investment in greater efficiency and insurance against waste and accidents. Write for catalog 319.



Swartwout
AIRMOVER

The Swartwout Co.
18511 Euclid Ave., Cleveland 12, O.

Swartwout
Dexter Heat Valve



Swartwout
Controlled Air Circulation

EQUIPMENT FOR EFFECTIVE ECONOMICAL
VENTILATION OF INDUSTRIAL BUILDINGS

When inquiring specify CP A6128 — see handy form pages 2-3

Production

Foot-Operated Switch Allows Complete Freedom of Hands

Series circuit unit available SPST or SPDT



Foot-operated switch

Features — Cast aluminum construction. Screw holes permit fastening to floor or machine. Diamond plate, non-slip-type treadle. Heavy, approved rubber cord with non-shattering male plug. Snap-action switch mechanism available SPST either normally open or normally closed as long as treadle is held depressed. Also available SPDT. Switch mechanism easily replaceable. Foot switch operates with very light pressure.

Description — Power handling capacity 1000 watts at voltages to 220V AC or 32V DC, non-inductive loads. Further details on request.

ELECTRONIC CONTROLS, INC., Dept. CP, 44 Summer Ave., Newark, N. J.

When inquiring specify CP A6129 — see handy form pages 2-3

Uses — Foot-operated switch for series circuits only, suitable for use with manufacturer's Model 1029 Timer or any equipment requiring reliable control of power with complete freedom of operator's hands.

TRADE **LESLIE** MARK **Exclusive Features** —at no extra cost!

- ➔ STELLITED SEAT RINGS
- ➔ STAINLESS STEEL 800 BRINELL MAIN VALVES
- ➔ CORROSION RESISTANT SPRINGS
- ➔ HARDENED STAINLESS STEEL CYLINDER LINERS

Supplied as *standard equipment* in **LESLIE** Pressure Reducing Valves, Pressure Controllers, Pump Governors, Temperature Regulators for Steam services.

Write for Bulletin 461.

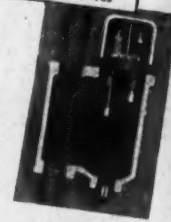
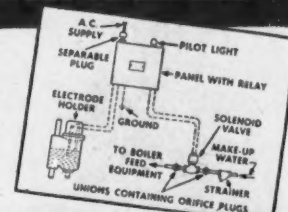


281 GRANT AVE., LYNDHURST, N. J.

PRESSURE REDUCING VALVES PRESSURE CONTROLLERS
PUMP GOVERNORS TEMPERATURE REGULATORS
SELF-CLEANING STRAINERS LESLIE-TYFON WHISTLES

When inquiring specify CP A6130 — see handy form pages 2-3

LOW COST PROTECTION *against* LOW WATER HAZARD



For pressures
to 300 lbs.
Write for bulletin

● Everything but the high price . . . that's how the Johnson Control compares with the conventional type of automatic boiler water level control. Its electrical operation reduces the unusual elaborate system to only a few simple parts. Stationary electrodes use the boiler water level itself to make and break circuit to an electric relay, which in turn opens make-up valve, controls steam or electric pump, or operates low water alarm or cut-off.

No water piping is needed; electrode holder can be mounted right on water column. Hundreds of installations have proved that operation is as dependable as the flow of electricity.

THE JOHNSON CORPORATION
826 Wood Street, Three Rivers, Michigan

JOHNSON
boiler water level control

When inquiring specify CP A6131 — see handy form pages 2-3



**COVER PIPES
TANKS, WALLS, etc.**

**INDUSTRIAL
NoDrip**

Anyone can brush, trowel or spray NoDrip on any clean, dry surface. Goes on like plaster, forms a seamless, protective coating.



STOP CONDENSATION DRIP

NoDrip keeps equipment and floors safe and dry; prevents corrosion of metal and prolongs its life. Acid, alkali and brine resistant. Comes in 1, 5 and 55 gal. drums, ready for use.

TRY NoDRIP

Apply NoDrip to a small area, compare the results with uncovered portions.

Send for free NoDrip Handbook

J. W. MORTELL CO.

530 Burch St., Kankakee, Ill.

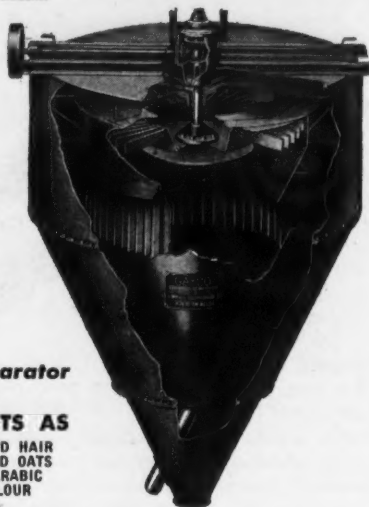
When inquiring specify CP A6132 — see handy form pages 2-3

Uniform Separation

FOOD PRODUCTS — CHEMICALS — METALLICS
NON-METALLIC MINERALS

The new model GAYCO Centrifugal air separator makes possible the uniform and increased recovery of fine material within a range of 40 to 400 mesh.

- Greater Capacity
- Cleaner Trailings
- 99% Through 325 Mesh
- 25% to 30% greater recovery of fines
- Not affected by variation in speed or rate of feed



The Gayco Separator Handles

SUCH PRODUCTS AS

BAGASSE	GROUND HAIR
CASEIN	GROUND OATS
COCCA POWDER	GUM ARABIC
COTTONSEED	SOY FLOUR
MEAL	SPICES
FERTILIZER	SUGAR

Universal Road Machinery Co.

RUBERT M. GAY DIVISION 117 Liberty St. New York 6, N. Y.
Canadian Representative: F. H. Hopkins & Co., Ltd., Montreal
FACTORY & LABORATORY, KINGSTON, N. Y.

When inquiring specify CP A6133 — see handy form pages 2-3

**ADDED
SAFEGUARD!**

**SPARKLESS
FLEXIBLE
COUPLING**

**Body of Tobin Bronze For
CHEMICAL INDUSTRIES
PAINT, VARNISH PLANTS
PETROLEUM REFINERIES, ETC.**

Wherever static or the
possibility of electrical
discharges exists

**LOVEJOY
L-R
FLEXIBLE
COUPLINGS**



L-R Type "A"
1/6 to 50 H.P.
Pat. and Pats. Pend.

Simple, three-piece construction, 2 Tobin Bronze bodies and insulating cushioning spider. Quiet. Requires no lubrication. WRITE for catalog of couplings up to 2500 H.P.

LOVEJOY FLEXIBLE COUPLING CO.

Also Mfrs. of IDEAL Variable Speed Transmissions
5072 West Lake Street, Chicago 44, Illinois

When inquiring specify CP A6134 — see handy form pages 2-3

Production

Valve Regulators Aid Burner Control

Light weight, rust-resistant unit
stocked in sizes 1/8"-1 1/4"

Uses — Appliance burner pressure single valve regulators for gas control.

Features — Light weight, non-corrosive, durable. Designed for ease of handling. Low shipping costs. Functionally streamlined interior flow passages. Large, smooth-walled areaways, holding pres-



Burner valve regulator

sure absorption to minimum. Generously proportioned valves and seats. Diaphragm, valve chambers and interior passageways built for standard pipe size, pressure drop and capacity requirements. Description — Regulator bodies and covers are pressure cast from special aluminum alloy one-third weight of iron. Exterior surfaces finished with grey lacquer protective coating. Sizes 1/8" through 1 1/4". Additional information mailed on request.

PITTSBURGH EQUITABLE METER DIVISION, ROCKWELL MANUFACTURING COMPANY, Dept. CP, Pittsburgh 8, Pa.

When inquiring specify CP A6135
— see handy form pages 2-3

Offers Viscosity Conversion Chart

Reprints of a viscosity conversion chart are available from Henry A. Gardner Laboratory at \$1 per copy. Widely used throughout paint and varnish industries. Remittances should be mailed to the address given below.

HENRY A. GARDNER LABORATORY,
Dept. CP, 4723 Elm St., Bethesda 14, Md.

When inquiring specify CP A6136
— see handy form pages 2-3

JERGUSON

The ANTI-FREEZE Gage



Have you any outside tank installations where you must be able to gage liquid levels accurately regardless of freezing conditions?

The Jerguson Anti-Freeze Gage is ideal for this purpose because with it the liquid is completely protected from freezing by an inner tube through which you can pass steam or hot water. The valves are steam jacketed. Thus, every bit of the liquid from tank — through gage — and back to tank can be kept warm and in fluid condition. Not only are accurate readings assured but gages and valves are kept from freezing and thus protected from damage.

The Jerguson Anti-Freeze Gage is available for a wide range of pressures in both Reflex and Transparent Types.

★ ★ ★

Jerguson is "headquarters" for liquid level gages and gage valves.

Write for details of our complete line.

JERGUSON GAGE & VALVE CO.

90 FELLSWAY

SOMERVILLE 45, MASS.

Representatives in the following cities:

APPLETON, WISCONSIN
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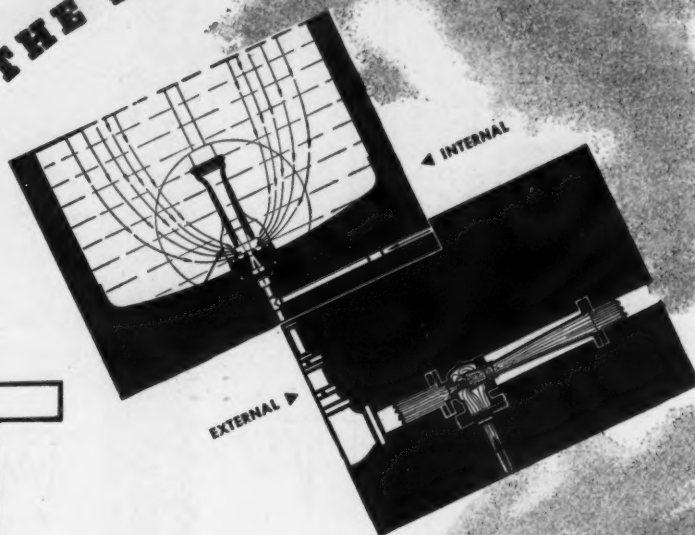
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ALL OF CANADA: PEACOCK BROS. LTD., MONTREAL 13

When inquiring specify CP A6137 — see handy form pages 2-3

ONLY THE LIQUIDS MOVE



... when they're mixed the *SK* way

THE SK Liquid Mixing Eductor operates on the jet principle—contains not a single moving part.

One liquid, under pressure, issues from a jet orifice at high velocity. It entrains another liquid—and, through extreme turbulence and friction, the two liquids are thoroughly mixed in any desired proportion.

Used both internally and externally (see drawings) these space-saving units daily are being applied to the proportioning of wetting agents, fertilizers, and insecticides—to the diluting of concentrates—and to the blending of fluids in such operations as commercial water-softening.

Jet-mixing of liquids has been pioneered by Schutte & Koerting—resulting in the accumulation of application know-how. Write today for Bulletin 2M.



SCHUTTE & KOERTING CO.
Manufacturing Engineers

1173 THOMPSON STREET • PHILADELPHIA 22, PA.

JET APPARATUS • CONDENSERS AND VACUUM PUMPS • HEAT TRANSFER EQUIPMENT
VALVES • ROTAMETERS • FLOW INDICATORS • GEAR PUMPS • STRAINERS
OIL BURNING EQUIPMENT • SPRAY NOZZLES AND ATOMIZERS • RADIAFIM TUBES

Production

Notched Leather V Belting is Light and Flexible

Absorbs jerks and jars and pulls together when unevenly matched in length

Uses — For application on both heavy and light machinery and appliances.

Features — Leather belts are light in weight, flexible and quiet in service. They do not fray, ravel or wear the sheaves, and under heat and oil conditions last well.

Leather belts are slightly elastic and this gives them many advantages. They operate at lower tensions and are easier on bearings. Jerks and jars are absorbed, protecting the motor and the machine. They maintain an even tension and contact with the pulleys throughout normal variations in the load. When several belts are used on the same pulley an individual belt may be replaced without affecting the others in the gang. The belts do not have to be matched in length as the elasticity of the leather will distribute the load evenly over the entire gang and they will all pull together.

Description — This belting is made in two series to fit every V-belt drive carrying the standard 40° angle sheaves. The lettered sizes A B C D etc. cover the range of all heavy industrial machinery in mills, shops and factories. Numbered sizes No. 0, 1 and 2 are for light machinery. Couplers are sold separately, each in individual envelopes containing illustrated instructions for applying. This leather V belting is packed in cartons of 100 ft. each. Required length is cut and readily made endless with the use of the metal coupler. Couplers are made with a chain link between two U shaped clips that bolt onto the ends of the belt. They are made of light weight heat-treated metal. Detailed literature may be secured on request.

S. R. SIKES COMPANY, Dept. CP, 1028 S. Third St., Minneapolis 15, Minn.

When inquiring specify CP A6139 — see handy form pages 2-3

★

Double Action Type Water Demineralizer Produces Water of Great Purity

Stays in operation longer between regenerations

Uses — For water demineralization in laboratories and industrial plants.

Features — Double action feature allows the unit to stay on the line longer between regenerations. This means less work for the operator and lower cost per gallon as the cost of operating a demineralizer lies largely in the labor spent in regeneration.

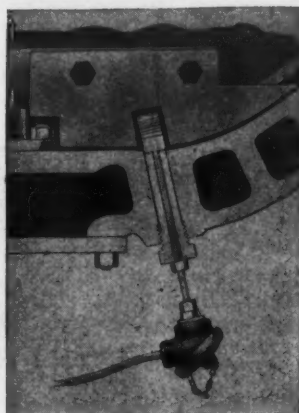
Description — It is so called double action because two cation resin beds and two anion resin beds are employed. Water passes through two complete ion exchange cycles. This demineralizer is manufactured in six models, ranging

CHEMICAL PREVIEW

When inquiring specify CP A6138 . . . see information request blank, pgs. 2-3

DOPP KETTLES

Positive temperature control of your product during processing



Dopp Kettles are available with patented thermocouples which indicate accurate temperatures of the material, regardless of the temperature of the kettle wall. This insures positive control of all production cycles. It is particularly valuable in the treatment of heat-sensitive products with critical operating temperatures.

BUFLOVAK EQUIPMENT

Division of Blaw-Knox Co.

1645 Fillmore Ave., Buffalo 11, N.Y.

When inquiring specify CP A6140 — see handy form pages 2-3

Production

from 3 gallons to 1000 gallons per hour capacity. Single action 2 bed models in the same capacity ranges are also available. Complete line is described in the manufacturer's Bulletin No. 112.

THE BARNSTEAD STILL & STERILIZER CO., INC.,
Dept. CP, 2 Lanesville Terrace, Forrest Hills, Boston 31, Mass.

When inquiring specify CP A6142 — see handy form pages 2-3

★

Grinding Wheels Combine Speed, Smoothness and Durability

Facts, specifications and costs of wheels and other abrasives for foundry grinding are graphically revealed in this handy, pocket-sized digest and reference guide. Covers resinoid wheels for billet grinding, steel and annealed malleable castings, gray iron and annealed malleable castings, brass, magnesium and aluminum castings. Tables, diagrams and illustrations of portable grinder wheels, including straight wheels, straight and flaring cups, cone and plug wheels. Recommendations for disc grinding on various metals and operations. Sizes, shapes and costs of mounted vitrified and resinoid points and wheels. Cataloged information on cut-off wheels, core files, crystolon rubbing bricks and grinding wheel dressers. Accompanying folder describes Norbide nozzles for pressure blasting and Norton refractories. Available on request.

NORTON COMPANY, Dept. CP, Worcester, Mass.

When inquiring specify CP A6143 — see handy form pages 2-3

Dings magnetic pulleys



Dings Magnetic Pulleys do a thorough job of automatic tramp iron removal wherever they are installed as head pulleys in conveyor systems... Applications range from metal mines to textile mills... in any place where positive tramp iron removal is important. Built for heavy-duty continuous use... Air-cooled design, bronze coil covers and end rings for high magnetic efficiency.

Write Dings for descriptive Catalog No. 260.

DINGS MAGNETIC SEPARATOR COMPANY
510 East Smith Street • Milwaukee 7, Wisconsin

Dings

"HIGH INTENSITY"

"Separation Headquarters Since 1899"

When inquiring specify CP A6141 — see handy form pages 2-3

CLEAN without soap



You may like soapy cleansers—and think they're good—until you try the new wetting agent, Alconox.

This amazing new cleanser
Lifts off hard-to-clean dirt... Fast
No matter what you want to clean, or how dirty it may be, Alconox will make it sparkle. Yet it is gentle on the hands.

Soapless but suds freely
ALCONOX cleans almost everything
So you needn't stock different cleansers for different jobs. One spoonful makes a gallon.

Just Wash and Rinse
It's Sparkling Clean
Wiping practically unnecessary.

Leading hospitals, laboratories, food and industrial plants use it—like it. So will you. Try it on your toughest job. 3-lb. box \$1.25; 12 boxes \$13.50; 50-lb. bag, 32c lb. l.o.b. New York. Prices for larger bulk on request. Order today from your dealer. If he cannot supply you, write to us.

ALCONOX INC.
227 Greene St.
New York 12, N. Y.

ALCONOX cleans better
cleans quicker

When inquiring specify CP A6144 — see handy form pages 2-3

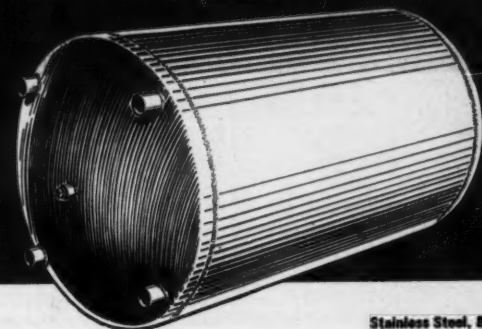
NATIONAL Welded Products

KNOWN FOR QUALITY
Since 1895

FROM
OPEN HEARTH,
STAINLESS,
ALLOY AND
CLAD STEELS

DETAILED
DRAWINGS
FURNISHED FROM
CONFIDENTIAL
BLUEPRINTS

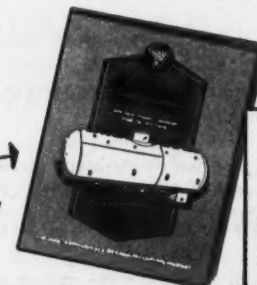
PRECISION
BUILT,
DEPENDABLY
FINISHED



Stainless Steel, 80%
Receiver—5'0" dia.,
8'0" long, 3/4" thick
plate. A.S.M.E. Code
U-69.

Solving tough fabricating jobs for industry has been "NATIONAL'S" business for more than fifty years. Unexcelled engineering—modern equipment—plus the manufacturing skill gained through years of working with all types of steels and alloys, to meet highest code requirements—makes "NATIONAL" your best choice when you need specially fabricated equipment.

Take a trip
through
our plant
→
SEND FOR THIS
BOOKLET TODAY



NATIONAL
PRODUCTS

Pressure Vessels
Galvanizing Kettles
Annealing Covers
Tin Pots
Salt Annealing Pots
Wire Annealing Pots
Special Plate Work

National

ANNEALING BOX COMPANY

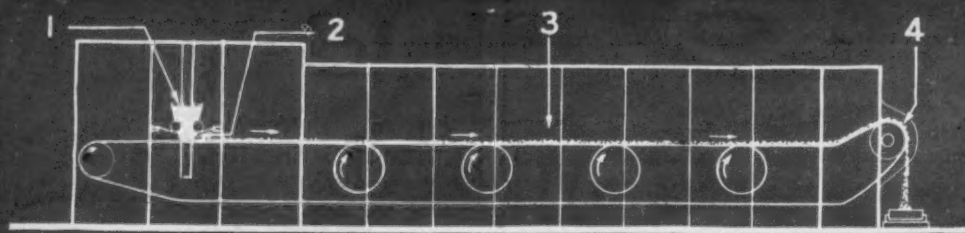
API-ASME Codes • Stress Relieving • X-ray
Pledged to Quality Since 1893
WASHINGTON, PENNA.

When inquiring specify CP A6145 — see handy form pages 2-3

CLOSE CONTROL and INCREASED OUTPUT
ASSURED IN PRODUCTION OF SULFA DRUGS
WITH

PROCTOR

CONTINUOUS CONVEYOR DRYER



1. Material is dewatered by means of a batch centrifuge and delivered to pre-forming feed of dryer.
2. Material is pre-formed into small extrusions by means of Proctor Rolling Extruder Feed, equipped with a special grid type of extruder plate. This particular type of plate is ideally suited to pre-forming the stiff cake of material as it comes from the centrifuge. Extrusions enter dryer with a moisture content of 105.5% (B.D.W.B.*).
3. Material is loaded to uniform depth of 3.5" on moving conveyor. Circulation of heated air is through bed of material on moving conveyor, promoting rapid, uniform drying.
4. Material is dried to moisture content of 0.32% (B.D.W.B.) at rate of 400-425 lbs. (C.D.W.†) per hour.

*Bone Dry Weight Basis.

†Commercial Dry Weight.

The problem of increasing the output of sulfa drugs to meet market demands and at the same time controlling the quality of the finished product, was one that was turned over to Proctor engineers for study. After considerable research into the subject they

arrived at a solution—it was a Proctor continuous conveyor system with a rolling extruder feed. Pre-forming the wet-solid material into small extrusions permitted the circulation of heated air to pass readily all the way through the bed of material on a constantly moving conveyor. Combining the pre-forming with the principle of conveyor drying enabled output to be increased to meet the plant's requirements. The dryer itself was so designed that accurate control was exercised over temperatures, air circulation, speed of the conveyor and humidity in the drying enclosure. The net result—increased output of a product that met all tests for quality. This system is but one of many "tailor-made" systems which Proctor engineers have designed for the pharmaceutical industry. If you have a pharmaceutical drying problem, don't hesitate, write today, giving us as much information as possible about your problem.



Small extrusions, formed by a rolling extruder feed with a special grid type plate, permit through circulation of air. Rapid, uniform drying results.

Production

Automatic Barrel Loader is Fast, One-Man Operation

Fixed and portable models, flexibly designed for size and height

Uses — For loading barrels, drums, hogs-heads and similar cylindrical objects aboard trucks and freight cars at warehouse or factory loading platforms.

Features — High speed, automatic operation. Fixed or portable. Requires only one man. Designed

for any reasonable size or height. Platform rises, tilts, returns automatically to floor level. Slight incline holds barrel safely, firmly in place against raised stop, which drops at desired height, allowing barrel to roll off.

Description — Platform of machine is countersunk flush with floor, or machine can be made portable by equipping frame with wheels, if desired. Barrels are rolled aboard platform by hand. Operator throws switch, setting machine in operation. This device is an adaptation of a short lift, standard, portable, non-revolvable elevator, incorporating the Zee Bar and other features found in the manufacturer's standard line. Uses standard motor hoist consisting of herringbone and worm gears. Motor and magnetic brake in one sealed unit. All shafts run in oil on ball and tapered roller bearings. Outboard end of shaft carried on self-aligning precision ball bearings. Full information available.

REVOLVATOR COMPANY, Dept. CP, North Bergen, N. J.

When inquiring specify CP A6147 — see handy form pages 2-3

★

Gripping Device Helps Eliminate Strains and Accidents and is Applicable to Many Problems

A four page bulletin completely-describes a cam lever mechanism and chain that grabs up heavily laden steel barrels or other containers and holds them in a vice-like grip that grows tighter the heavier the load. Specifications and prices are included on two units, one a single strand grip and the other a double strand unit with a special chain furnished as standard equipment. A special four strand model is also available, and it is particularly adapted to handling corrugated boxes and platforms. Units are equally effective when used with over-head cranes, chain falls, jib cranes and the like. When used with lift trucks, it will lift and snake containers out of seemingly inaccessible places. Information will be promptly sent on request.

THE BOYER-CAMPBELL COMPANY, Dept. CP, 6540 St. Antoine St., Detroit 2, Mich.

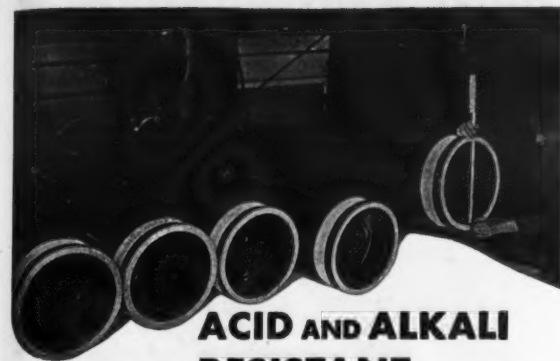
When inquiring specify CP A6148 — see handy form pages 2-3

CHEMICAL PREVIEW

P&S

PROCTOR & SCHWARTZ, INC. • PHILADELPHIA 20 • PA.

When inquiring specify CP A6146 . . . see information request blank, pgs. 2-3



ACID AND ALKALI RESISTANT

HAVEG is a molded plastic, which is completely resistant to most acids or alkalis. Its chemical resistance is uniform throughout its entire mass. It is not a lining or coating.

HAVEG Chemical Equipment is made in standard tanks, pipe, towers, fittings, valves, fume duct and related items, also a variety of special equipment.

Send for Bulletin F3 which gives complete design, engineering and application data.



When inquiring specify CP A6149 — see handy form pages 2-3



COTTON DUCKS AND FILTER FABRICS

BURCOTT MILLS regularly supplies cotton ducks and filter fabrics for the following industries: Chemical, Oil & Wax, Dye-stuff, Cement, Cane & Beet Sugar, Food-Processing, Ceramic Processing, Paint, Mining, Quarry and Smelting. Just a few of the items for quick delivery from Chicago stock:

36" No. 6 Duck 36" No. 8 Duck
42" No. 6 Duck 60" No. 8 Duck
72" No. 6 Duck 120" No. 8 Duck
84" No. 6 Duck 26" No. 10 Duck
32" No. 10 Duck
26" 19.00 oz. Chain Cloth
26" 15.00 oz. Chain Cloth
26" 17.50 oz. Chain Cloth

Subject to prior sale
WRITE, WIRE, OR PHONE.

BURCOTT MILLS

622 W. Fulton Street

Chicago 6, Illinois

When inquiring specify CP A6150 — see handy form pages 2-3

NOVEMBER-DECEMBER, 1946

Production

Stainless Welding Fittings Are Rust- Resistant

Industrial piping includes tees, caps, elbows, returns, reducers, stub ends, flanges, etc.

Uses — Line of stainless steel welding fittings for industrial and marine piping, including 180° long radius returns, 90° and 45° long radius elbows, straight tees, reducing outlet tees, caps, eccentric reducers, concentric reducers, lap joint sub ends, laterals and crosses, all in standard and extra heavy weights; and welding neck, slip-on, threaded, blind, socket-type welding, reducing orifice and lap joint flanges. Sizes: 3/4" through 12". Also carbon steel, monel, brass, copper and other metal fittings.

Features — All fittings, including stainless steels, forged by patented process resulting in close-grained, uniform metal structure with no locked-in residual stresses. Leakproof joints, minimum flow resistance, durable. Stainless steel fittings: resist atmospheric corrosion, acids, chemicals and high temperature scaling. Strong, ductile at sub-zero and elevated temperatures. Long life, reduced maintenance cost, clean and attractive appearance, less contamination.

Description — Three grades of stainless steel fittings are available: Type 304, containing 18% chromium, 8% nickel; Type 347, containing 18% chromium, 8% nickel and approximately 1% columbium; and Type 316, containing 18% chromium, 8% nickel, 2% molybdenum.

TUBE TURNS, INC., Dept. CP, Louisville, Ky.

When inquiring specify CP A6151
— see handy form pages 2-3

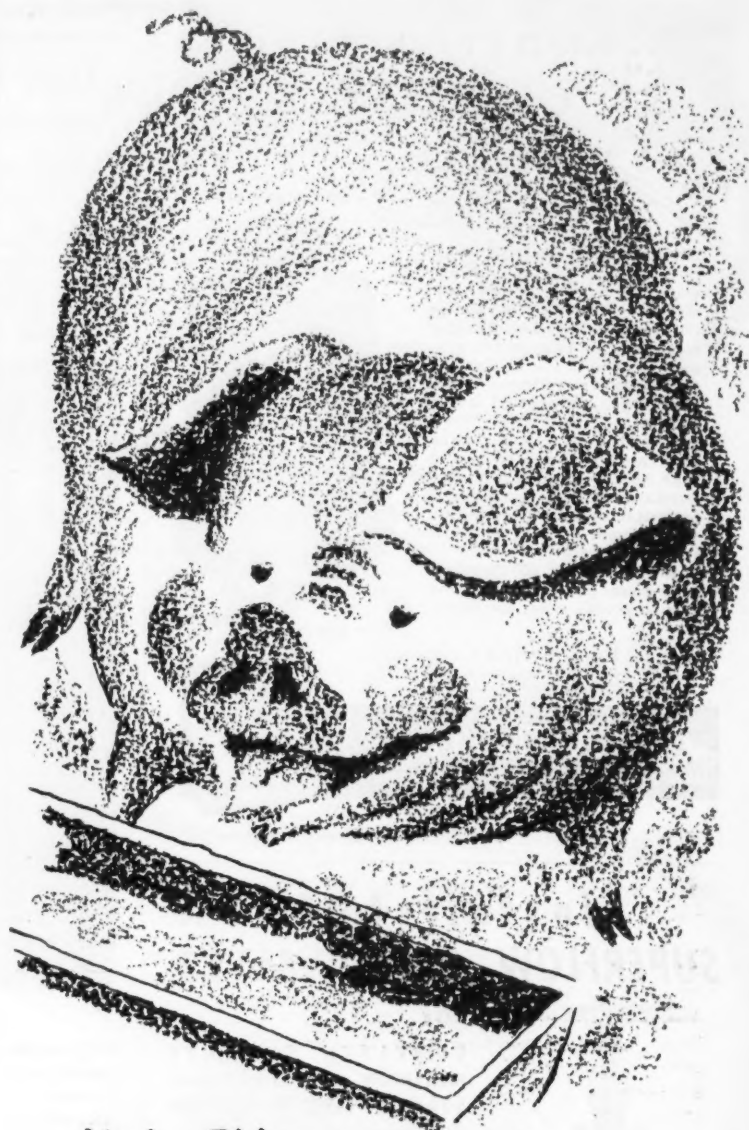
★

All About Nitrile Plasticizers

Nitrile plasticizers is theme of four-page bulletin describing use of aliphatic nitriles in connection with polyvinyl chloride-acetate copolymers, polystyrene resins, Buna N synthetic rubber, etc. Advantages: low-temperature flexibility, high elongation, low Durometer hardness, resilience. Softener study includes test recipe for Arneel "TO" or Arneel "TOD" in nitrile rubbers, also tables covering properties of vulcanizates and aged samples. Write for booklet, "The Arneels as Plasticizers."

ARMOUR CHEMICAL DIVISION, ARMOUR AND COMPANY, Dept. CP, 1355 W. 31st St., Chicago 9, Ill.

When inquiring specify CP A6152
— see handy form pages 2-3



Make This DUST HOG Pay His Own Board

The majority of users of Pangborn dust control equipment say their systems practically pay for themselves due to reclamation of dust by-products.

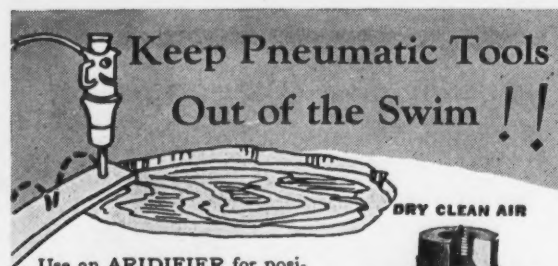
Even if your plant's dust is worthless, it pays to keep DUST HOG from devouring profits—interfering with worker efficiency, helping wear out equipment, soiling finished goods, causing accidents.

A free booklet, "Control of Industrial Dust," tells how to eliminate costly "dust pockets". Write PANGBORN, 286 Pangborn Boulevard, Hagerstown, Maryland—world's largest manufacturer of dust control and blast cleaning equipment.

Pangborn

PANGBORN CORPORATION, HAGERSTOWN, MARYLAND

When inquiring specify CP A6153 — see handy form pages 2-3



Use an ARIDIFIER for positive removal of tool-dousing water from your compressed air lines... takes out excess oil and dirt, too. Delivers the clean, dry air that means savings for you... in equipment maintenance, reduced work stoppages, improved work quality.

Counter-spinning rotors motivated by the air stream at high speed—whip air free of contamination. No filters, screens or other devices requiring frequent cleaning or causing back pressure.

Made in $\frac{3}{8}$ " to 10" standard pipe sizes. Solve your air line troubles now—send for Bulletin 445.

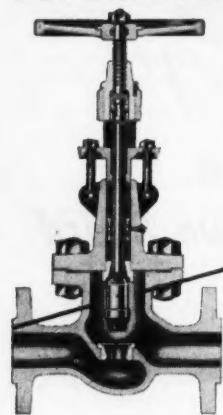
Logan Engineering Company
4900 Lawrence Avenue,
Chicago 30, Illinois

Logan ARIDIFIER
Dries and Cleans Compressed Air

When inquiring specify CP A6154 — see handy form pages 2-3

Install LUDLOW SUPERFLOW MULTI-VALVES

for
**COMPLETE SHUT-OFF
MINIMUM HEAD LOSS and
STRAIGHT LINE THROTTLING**



Scientifically designed Superflow plug and seat, combined with correct streamline body design, gives you all three in this one wonder valve.

Built for extra life, LUDLOW SUPERFLOW Multi-Valves actually improve with use, require no regrinding, provide positive stop and throttle action. SM-1A

Let us send you illustrated bulletin giving complete information.

LUDLOW VALVE
MFG. CO. INC. TROY, N.Y.

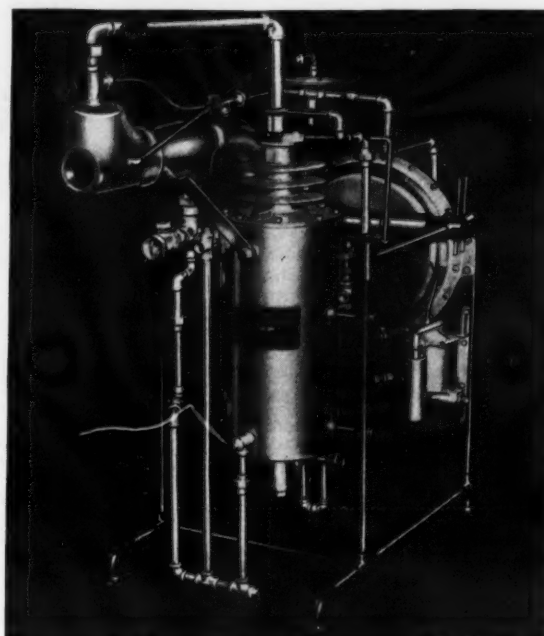
When inquiring specify CP A6155 — see handy form pages 2-3

Production

Heat Processing Oil Vaporizers Get Gas Results From Fuel Oil

Useful as utility gas pre-mixer, initial oven and furnace heater, or as standby unit

Uses — Oil generating vaporizer for industrial heat processing. Also highly efficient as a pre-mixer of utility gas, natural or manufactured, and as a standby for all industrial gas heat processing operations. Used as initial equipment for heating industrial ovens and furnaces, from baking



Typical Vaporifier installation

ovens operating at 150° to high temperature furnaces requiring over 3000° F.

Features — Using fuel oil, this unit generates and supplies vapor which is then mixed with air and piped, burned and controlled in the same manner as utility gas. Fuel-air ratio may be predetermined and maintained through entire range of capacity. Flame quality may be varied from oxidizing to reducing.

As a utility gas pre-mixer: unit holds constant air-to-gas ratio over wide range with either natural or manufactured gas. Pre-mixer is fully automatic, instantly adjusts to any variation in requirement without change in flame quality. Subject to same automatic controlling instruments as are used with any gaseous fuel. By closing valve to combustion chamber, gas is mixed with air in proper ratio. In event of gas cut-off or failure, the unit using fuel oil may be cut in without loss of flame at burners.

As an oil-gas generator: in heat processing, unit gives fast heat penetration, low scaling, complete high-low or floating heat control. Saves product spoilage in processing and lost man-hours in event of shut-off.

Description — Trade name: "Vapofier". Eight standard sizes. Capacities from 70,000 BTU's, or 5 gals., per hr., to 2,000,000 BTU's, or 14 gals., per hr. Occupies 2' x 4' floor or overhead space. Larger sizes built to order.

VAPOFIER CORPORATION, Dept. CP, 10316 Throop St., Chicago 43, Ill.

When inquiring specify CP A6156 — see handy form pages 2-3

WHAT A MIXER this is!

**GROEN
MIXER TYPE
KETTLE**



**STAINLESS STEEL
STEAM JACKETED**

Count on this thoroughly dependable kettle to produce the most efficient cooking and mixing you demand. Built by GROEN, world's largest producers of Stainless Steel Steam Jacketed Kettles, it is expertly designed, engineered and tested for consistent performance.

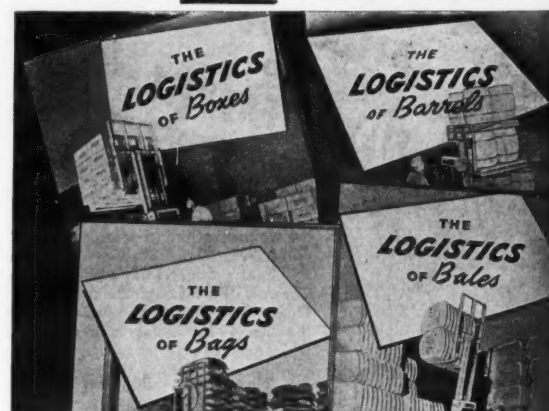
Works fast. Easy to handle. Unexcelled where precise and reliable processing is vital. Get details on this. Write us today.

Hundreds of leading Chemical Plants, etc. use and endorse this great kettle.

GROEN MFG. CO.
4535 W. Armitage Ave., Chicago 39

When inquiring specify CP A6157 — see handy form pages 2-3

Lower Distribution Costs For Your Products

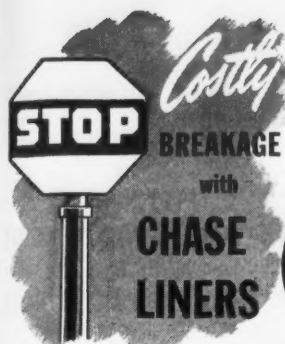


Ready now! New Bulletins describing *Industrial Logistics*—today's method of transporting your Plant loads in Boxes, Barrels, Bags or Bales—in Master Units—on Pallets or Skids—at increased speed and greatly-reduced costs.

Your nearby Elwell-Parker Materials-Handling Consultant will gladly deliver copies to you upon request. The Elwell-Parker Electric Co., 4239 St. Clair Ave., Cleveland 14, Ohio.

ELWELL-PARKER
POWER INDUSTRIAL TRUCKS
Established 1893

When inquiring specify CP A6158 — see handy form pages 2-3



Chase Liners are crinkled and pleated. They're flexible, elastic—stretch in all directions. Provide greater protection, stop costly liner breakage. Check on Chase Liners today—it's the better product that costs no more than ordinary liners.



CHASE BAG CO.

GENERAL SALES OFFICES
309 WEST JACKSON BLVD., CHICAGO 6, ILL.

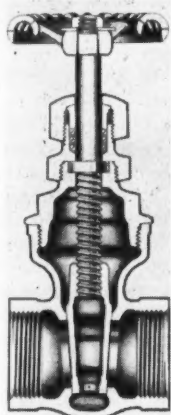
BIRMINGHAM • DALLAS • DENVER • DETROIT • MEMPHIS • PITTSBURGH • RICHMOND • ST. LOUIS • ST. PAUL • ST. PETERSBURG • TAMPA • WASHINGTON, D.C. • WICHITA • WILMINGTON, DE. • WYOMING • ALBANY, N.Y. • ALBUQUERQUE, N.M. • ANCHORAGE, ALASKA • ARIZONA • ARKANSAS • CALIFORNIA • COLORADO • CONNECTICUT • DELAWARE • FLORIDA • GEORGIA • ILLINOIS • INDIANA • IOWA • KANSAS • KENTUCKY • LOUISIANA • MAINE • MARYLAND • MASSACHUSETTS • MICHIGAN • MINNESOTA • MISSISSIPPI • MISSOURI • MONTANA • NEBRASKA • NEVADA • NEW HAMPSHIRE • NEW JERSEY • NEW YORK • NORTH CAROLINA • NORTH DAKOTA • OHIO • OKLAHOMA • OREGON • PENNSYLVANIA • RHODE ISLAND • SOUTH CAROLINA • SOUTH DAKOTA • TENNESSEE • TEXAS • VERMONT • VIRGINIA • WISCONSIN • WYOMING

When inquiring specify CP A6159 — see handy form pages 2-3

Production

Reinstates 18-8 Mo Alloy Valves And Fittings

Globe, gate, check, relief valves available in 1/4-2, 1-4 in. sizes



Cross-sectional view of non-rising stem gate valve

Uses — For handling acetic acid, nitric acid, alum solutions, alkalis, limes, bleaching solutions, corrosive mine waters, fatty acids, food products, fruit juices, sulfite liquors and vapors in paper mills, sulfuric acid, tanning liquors and a large number of other industrial chemicals.

Features — Manufacturer announces reinstatement of line of 18-8 Mo alloy steel corrosion-resistant valves and fittings, regular manufacture of which was discontinued during the war.

Description — The 18-8 line includes globe, gate, check and relief valves in both screwed and flanged patterns, liquid level gauges, screwed and flanged fittings. Sizes in screwed end patterns are 1/4 to 2 inches, and in flanged end patterns 1 to 4 inches.

CRANE CO., Dept. CP, 836 S. Michigan Ave., Chicago 5, Ill.

When inquiring specify CP A6161 — see handy form pages 2-3

★

Packing Prevents Damage To Sealing Materials

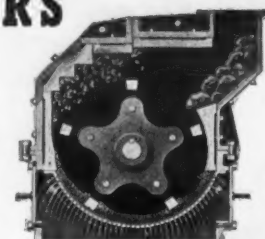
T-Ring Packing is discussed in a booklet that points out various features. This packing consists of a resilient sealing ring of synthetic rubber in a T-section packed up by two non-extrusion ring retainers. When the operating pressure is increased the flange of the T-packing expands radially against the non-extrusion rings. This action holds it in contact with the surface of the cylinder or piston rod. The sealing material is prevented from being damaged by extrusion into the clearance space between the mating parts. The packings are well illustrated in this booklet which is available on request.

THE WEATHERHEAD COMPANY, Dept. CP, 300 E. 131 St., Cleveland 8, Ohio.

When inquiring specify CP A6162 — see handy form pages 2-3

PULVERIZERS

Swing hammer type for reducing limestone, shale, soda ash and similar materials to 10 mesh or coarser. Four standard sizes, all with manganese steel hammers and hardened breaker blocks that insure rapid crushing at low power cost. Send for catalog.



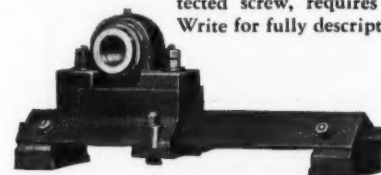
BELT IDLERS

For belts 14 to 48 inches wide. The pulleys are sturdy, rugged, built with straight sides to shed dust and rounded corners to prevent injury to the belt. They are evenly balanced and run true insuring long life. Furnished troughed or flat, in standard and many special designs.



TAKE-UPS

For moderate, intermediate and heavy duty service. The Style H heavy duty take-up illustrated herewith is available with solid journal, pillow block or anti-friction bearings,—features a protected screw, requires little clearance. Write for fully descriptive catalog.



THE C.O. BARTLETT & SNOW CO.

6270 HARVARD AVE. • CLEVELAND 5, OHIO

DRYERS, COOLERS, CALCINERS AND KILNS
BOILER PLANT COAL AND ASH HANDLING SYSTEMS
CONVEYORS, CRUSHERS, FEEDERS, SCREENS

When inquiring specify CP A6163 — see handy form pages 2-3



TUF-TRED TIRE FABRIC MATTING

A long-wearing mat for use around machinery, on ramps, and wet floors. Beveled nosing on all sides. 3/4" thick, up to 6' wide, any length.

AMERICAN COUNTER-TRED MATTING

A tough, long wearing rubber and cord mat with a resilient non-slip surface that affords safety in wet or slippery areas. Ridged bottom affords aeration and drainage. Easily handled for cleaning. Adheres to floor. 3/4" thick, 24" wide, any length.

AMERIFLEX Roll-Rubber Matting

Flexible Hard Wood Link Matting
Links are held on galvanized steel springwire framework. Beveled edges. Can be rolled or folded.

"WALRUS HIDE"
36" wide, 1/4" thick, approx. 50 yards long.

Write for prices and folder, "A Mat For Every Purpose", for promoting safety, providing comfort, reducing fatigue and furthering sanitation.

AMERICAN MAT CORPORATION
"America's Largest Matting Specialists"
1798 Adams Street
Toledo 2, Ohio.

The ONLY Successful OIL and GREASE RESISTANT MATTING

Neo-Cord Counter-Tred

Contains no rubber
Made with Dupont Neoprene

When inquiring specify CP A6160 — see handy form pages 2-3

This Book TELLS YOU WHY...

FOR THE SAKE OF YOUR BUSINESS

CONSIDER PUEBLO'S 12 POINTS TO PROSPERITY

PUEBLO, COLORADO

IS THE LOGICAL LOCATION FOR YOUR **Factory**

This twenty-page brochure is designed to give you a concise and graphic picture of the industrial center of the Rocky Mountain Empire. Read it... judge for yourself...

Whether Pueblo, with 81,969 population is logically located for your plant...

Whether you would enjoy living in a climate air-conditioned by Mother Nature...

Whether a location at the hub of direct air, rail, and highway routes to all parts of the nation is important to your expansion program...

Whether a local trade territory offering 600,000 prosperous consumers would be a profitable asset to your operation...

Whether a willing, cooperative labor market could be considered a factor...

And whether you wish to invest in the future of Pueblo where the greatest of the industries of the region now thrive.

YOURS FOR THE ASKING! Write today on your firm's letterhead for your copy of "12 Points to Prosperity." No obligation, of course.

Pacemaker of the West!



When inquiring specify CP A6164 — see handy form pages 2-3

Production

Solenoid Operated Heat Sealer Equipped With 30" Chrome-Plated Sealing Bars

Dial thermostat controls heat to 550 degrees

Uses — Will heat seal unusually large bags, pouches, sheets and similar containers.

Features — These include: ball bearing action for sealing bars, floating or self-aligning sealing bars, pressure equalization adjustments for face of bars if required, a safety switch box, choice of sealing bar widths, expanded metal protective cover, and a sanitary finish.

Description — Sealing action is instigated by pressing the safety foot switch which actuates the replaceable -ram solenoid. Dial thermostat controls the temperature in the full length, stainless steel sheathed heating elements, providing a heat range from room temperature to 550 degrees. To cope with wide bags, pouches etc., a simple forward-backward adjustment of the entire machine is provided. Unit may be mounted horizontally on a work bench or table, or may be operated vertically when installed on the side of the bench. Descriptive literature is provided.

PACK-RITE MACHINES, Dept. CP, division of Techt-mann Industries, 714 W. Wisconsin Ave., Milwaukee 1, Wis.

When inquiring specify CP A6165 — see handy form pages 2-3

Self-Cleaning Water Strainer Removes Fine Suspended Particles From Various Liquids

Installed capacity cleaning over 3 million gallons
per minute in process plants

Uses — For the removal of fine suspended particles from raw or processed water and other liquids.

Features — Machine is automatically self cleaning. It assures a steady flow of clean water from rivers, lakes or wells.

Description — Strainer consists essentially of a slowly rotating conical drum, mounted on a vertical shaft, within a cast iron housing. The entire surface of the drum is drilled to receive the straining media which consists of porcelain discs, or flat, or conical wire stainless steel screens. Dirty water, or liquid to be strained, enters through an inlet at the bottom of the housing, and then rises around the outside of the revolving drum. The discharge of the clean water is through an outlet at the bottom of the housing. Dirty water entering the strainer is under pressure and therefore passes through the straining elements. Foreign matter in the water is retained on the surface of the perforated porcelain discs or screens, and is carried in this position by slow rotation of the drum, to a backwash slot, where the dirt is discharged with the backwash water. At this slot a reversal takes place, and clean water from the inside of the drum flashes through the screening media and removes the dirt from the strainer. Strainers are built in 3" to 30" pipeline sizes. Complete literature is available.

S. P. KINNEY ENGINEERS, INC., Dept. FP, 233 Oliver Ave., Pittsburgh 22, Pa.

When inquiring specify CP A6166 — see handy form pages 2-3



THE NEW REX MACHINE TOOL CONDUIT TYPE M. T. C. by CHICAGO METAL HOSE

C.M.H. is proud to present a new product, built in coordination with the Joint Industry Committee of Plant and Electrical Engineers—in cooperation with the National Machine Tool Builders Association—

CHECK THESE OUTSTANDING FEATURES—
THEN WRITE US FOR DETAILED INFORMATION

- Flexible metal hose liner
- Synthetic cover
- Extremely flexible
- Smoothness of flexible metal hose bore prevents excessive abrasion
- No detrimental abrasive surfaces throughout hose-fitting assembly
- Liquid-tight externally
- Liquid-tight steel fittings—usable with both standard and water-tight conduit boxes
- Fittings are attachable and re-attachable by user—or can be permanently attached at factory
- Sizes from 3/8-in. I.D. to 1 1/2-in. I.D. inclusive
- Furnished in mill lengths or cut lengths, with factory-attached fittings both re-attachable or permanently attached—or with fittings supplied loose for user to attach.

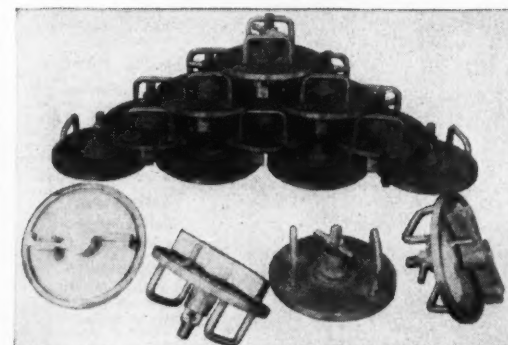
Write for Bulletin M. T. C.—46

Flexible Metal Hose for Every Industrial Use

CHICAGO METAL HOSE CORPORATION
MAYWOOD, ILLINOIS
Plants: Maywood and Elgin, Ill.

When inquiring specify CP A6167 — see handy form pages 2-3

ALLOY Stainless Fabrication



On every stainless job, it is well to get an Alloy quotation—to find out what you can gain in satisfactory work and exceptional service.

Tell us your needs, and ask for Bulletin CP 30.

ALLOY Manufacturing Co., Inc.
30th and Brereton Ave., Pittsburgh 19, Pa.

When inquiring specify CP A6168 — see handy form pages 2-3

FMC-One CENTRAL SOURCE

For GOOD CHEMICAL EQUIPMENT

34 Fitzpatrick Model D Comminuting Machines

2 Mikro No. 151 Pulverizers with motors

55 Rotary and Single Punch Stokes and Colton
Tabletting Machines or Presses

7 Colloid Mills, Eppenbach, Charlotte, U.S. Premier,
and others

1 Allen 8" Strainer with screen

1 Beach Russ Rotary Vacuum Pump 750 CFM

5 Devine-Buffalo Vacuum Shelf Dryers

6 Raymond Pulverizers, Nos. 45-00-0000

Send for Complete List — Thousands of Items

Highest Prices Paid for Your SURPLUS Equipment

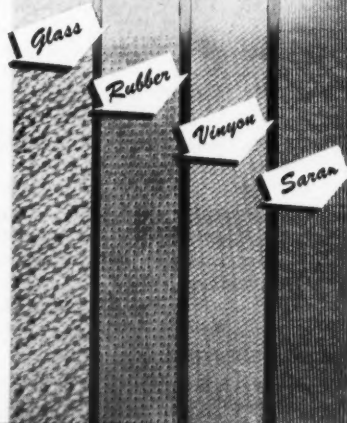


When inquiring specify CP A6169 — see handy form pages 2-3

Change in processing may mean change in FILTER MEDIA

SHOULD IT BE...

As operating conditions change, the proper medium for economical filtration may change. Hot acid, cold caustic and varying percentages of solids all demand different FILTER MEDIA. If you are considering making any changes in your present processing, why not submit the new filtration problem to us?



Filter Media Corporation

SPECIALISTS IN FILTER CLOTH FOR INDUSTRIAL FILTRATION
CHICAGO • SALT LAKE CITY
11-FM-1

HAMDEN 14, CONNECTICUT

When inquiring specify CP A6170 — see handy form pages 2-3

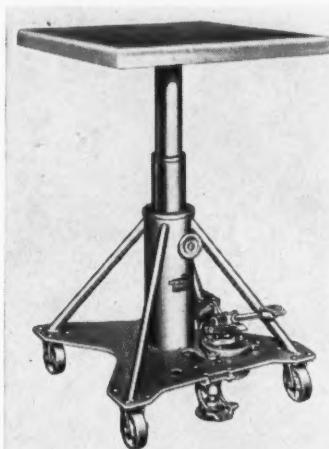
Production

Elevator Provides 22" Lift For Tables

Cylinder's extra "oomph" useful in die, jig, fixture handling; assembly and transfer

Uses — Used in handling dies, jigs and fixtures, in assembly operations, and as transfer member in conveyor lines.

Features — Designed for ranges of elevation not obtainable with standard



Hydraulic elevating table

hydraulic elevating table. Provides elevating range from 28" to 50", or total lift of 22". Strength and rigidity of central column has not been lessened. In handling dies, jigs, fixtures, table permits leveling with press beds and storage racks, allowing easy transfer.

Description — Except for cylinder and guide sleeves, standard elevating table parts are used. Optional extras developed for standard table are available for telescopic table. These include two-speed foot pump, demountable roller top, telescopic towing handle, die separator, indexing device and retaining bars.

LYON-RAYMOND CORPORATION,
Dept. CP, 2786 Madison St., Greene,
N.Y.

When inquiring specify CP A6171
— see handy form pages 2-3

★

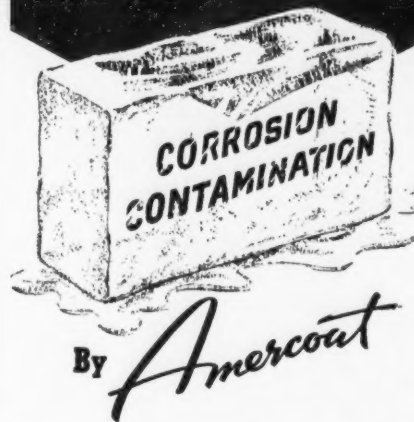
Woven Wire Conveyors Speed Drying

Woven wire conveyor belts with open-mesh construction allowing free circulation on dryers fully described, all types. Request Bulletin No. 84.

THE CAMBRIDGE WIRE CLOTH CO.,
Dept. CP, Cambridge, Md.

When inquiring specify CP A6172
— see handy form pages 2-3

Stopped Cold

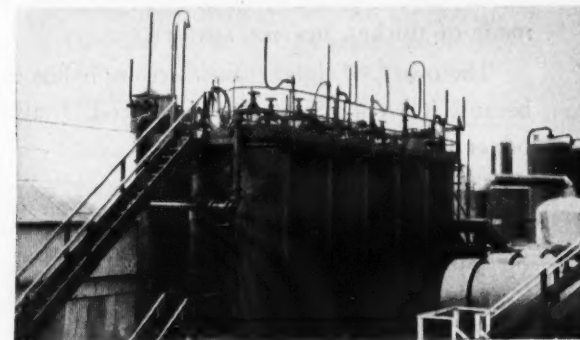


One of the largest petroleum refiners in the world has found AMERCOAT Plastic Coating effective in controlling corrosion in a refrigeration plant at one of its refineries.

The illustration below shows a battery of 12 ammonia condensers, part of this plant. All of the structure visible in the photograph has been coated with AMERCOAT. Sea water is used as a coolant and the entire structure is subject to constant salt spray, as well as ammonia and acid fumes.

Previously, in spite of regular painting and maintenance, corrosion developed. After AMERCOAT was applied in July, 1944, there was no sign of further corrosion — stairs, walkways and other structures subject to mechanical and manual abrasion showed a minimum of corrosion.

AMERCOAT Plastic Coatings applied cold by brush or spray to metal, concrete or wood act as a barrier to corrosive action encountered in the petroleum industry — salt water, hydrogen sulphide, caustic soda, sour crudes, sulphuric acid, and many other corrosive salts, acids and alkalis.



IN THE CHEMICAL
INDUSTRY IT'S



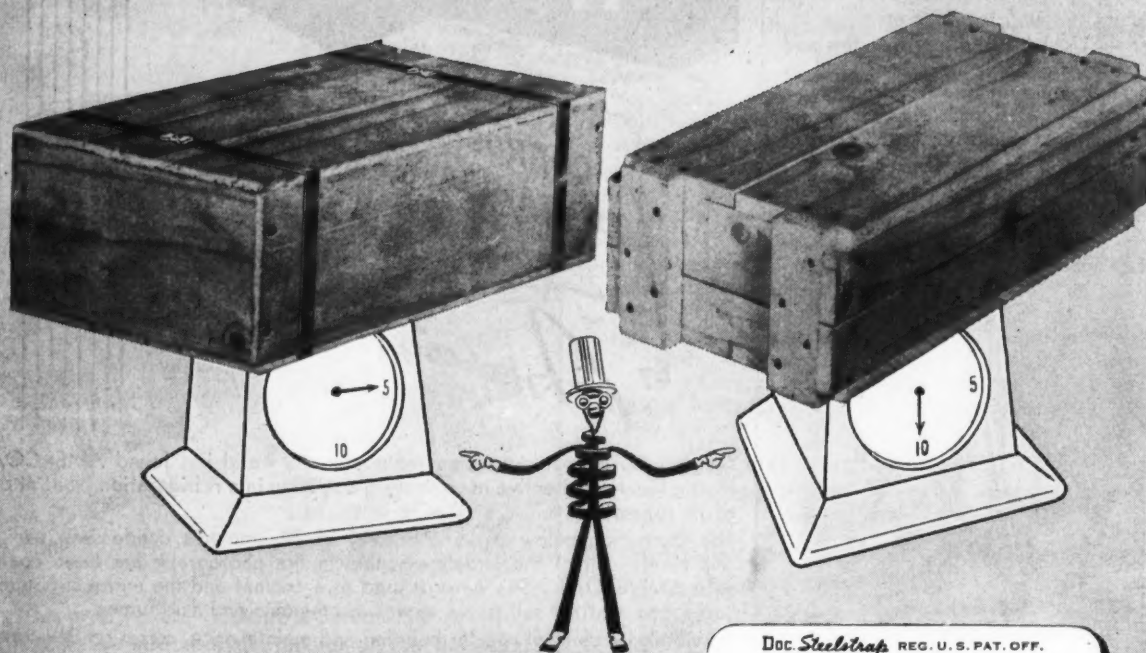
Ask for
Booklet 3-H

AMERCOAT DIVISION:
AMERICAN PIPE & CONSTRUCTION CO.
P.O. Box 3428, Terminal Annex, Los Angeles 54, California

When inquiring specify CP A6173 — see handy form pages 2-3

"BOUND TO GET THERE"

with Less Tare Weight...



Because of *Acme Steelstrap*

Of necessity, one of the two shipping cases above is made of thicker, heavier, costlier lumber.

The other, of lighter construction, is less expensive because it's Acme Steelstrap reinforced. It also affords better product protection.

Less tare weight, resulting in lower cost packing and cash money saved, is just one of several Acme Steelstrap advantages.

Investigate now and learn the complete story. You'll find Acme Steelstrap and methods provide thriftier, more efficient shipping and more protection for *your* products.

Doc. Steelstrap REG. U. S. PAT. OFF.

50% LESS LUMBER EFFECTS 47% SAVING IN COST

A well-known shipper says:
"... for some time now in shipping our merchandise, we have used various Acme Methods in combination with Acme Steelstrap, and kept close tab on their performance. Average results were:

42% reduction in weight
50% less lumber used
47% savings in cost!"

NEW YORK 7

ATLANTA

CHICAGO 8

LOS ANGELES 11

ACME STEEL COMPANY

ACME STEEL CO.
CHICAGO

When inquiring specify CP A6174 . . . see information request blank, pgs. 2-3

Production

Container Chain Conveyor Operates as Smooth Table

Has links that can be quickly and easily adjusted, removed or replaced

Uses — For the safe, speedy, automatic conveying of all kinds of bottles, jars, and cans.

Features — There are no "pockets" to encourage bacteria in the construction of the unit. Links can be quickly and easily adjusted, removed or replaced. Availability is in any length with any desired accessories. It is a flexible, simple, smooth operating system that has utility and adaptability.



Available in any length with any desired accessories

Description — Power unit is hung from return rack, requiring minimum space. Return chain belt rides on track thereby eliminating sag and vibration. Flat smooth top steel chain is like a continuous flat top table with every link fitting and operating as though a solid belt. Detailed literature may be had by writing.

ISLAND EQUIPMENT CORPORATION, Dept. CP, 101 Park Ave., New York 17, N. Y.

When inquiring specify CP A6175 — see handy form pages 2-3

★

Hood Shades Attached to Box Covers Have Adjustable Sockets

Are available in a wide choice of arm lengths

Uses — For spot lighting interiors for display or production purposes.

Features — Units will work regardless of vibration and the number of adjustments made. There are no wing-nuts or screws to adjust — socket is held in place by means of special inside spring construction. They are universally adjustable to any position from 90° vertical to 350° horizontal. Wires will not twist, due to patented "stop" construction.

Description — These units are available in a choice of arm lengths, from flush mountings on 3½ or 4 inch outlet box covers to a 36 inch pipe attached to the outlet box cover. Also available are adjustable "clusters" of 2, 3, and 4 shades attached to a single 4 inch outlet box cover. Each item is made with adjustable socket. Literature may be had on this equipment.

SWIVELIER COMPANY, Dept. CP, 30 Irving Place, New York 3, N. Y.

When inquiring specify CP A6176 — see handy form pages 2-3

Production

Portable Steam Unit Cleans, Disinfects

*High pressure machine spruces up
floors, windows, machinery*

Uses — Portable high pressure steam cleaning machine for mill and industrial equipment; floors, walls, windows and building exteriors; production, road and farm machinery; parts, automobile engines and chassis; or for cleaning, sterilizing and disinfecting dairies.

Features — Compact, maximum portability. No dead weight. Large, semi-steel wheels plus steering tongue permit easy



Steam cleaning machine

transfer from one cleaning job to another. Oil or gas fired. Requires only an electric current outlet and hose connection to water supply. All machinery end-mounted, fully accessible. Full-view control panel. Furnished with or without removable, die-formed steel machinery cover. Steel-fabricated, electric-welded construction. Where powerful flushing and rinsing action plus extra water capacity are required, use of Adjusta-Blast Gun (optional equipment) will increase water capacity to 480 gals. per hr. Plant labor can operate.

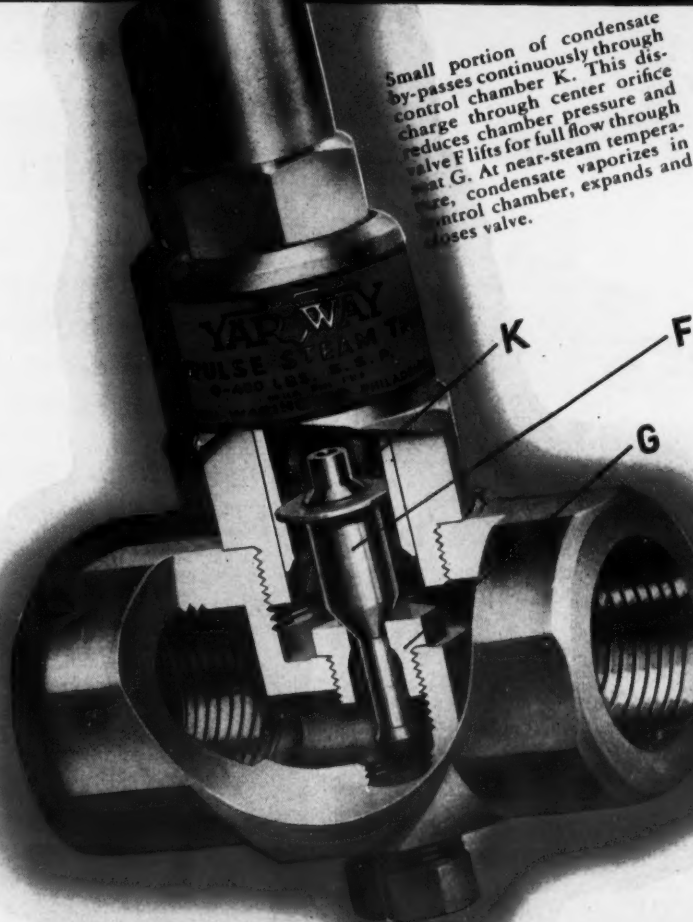
Description — Model JO Hypressure Jenny Instantaneous Steam Cleaner. Normal operating pressures from 80 to 120 lbs. at 90 gals. per hr. capacity. Overall dimensions 55" x 28" x 47 1/2". Weight 520 lbs. Cleans by highly atomized mixture of steam, hot water and cleaning compound applied under pressure via spray nozzle. Write for two-page specification circular.

HOMESTEAD VALVE MANUFACTURING COMPANY, INC., Dept. CP, Coraopolis, Pa.

When inquiring specify CP A6177
— see handy form pages 2-3

For more information on product at right, specify CP A6178
... use information request blank between pages 2-3.

SIX and How They Work!



Six Yarway Impulse Steam Traps—doing a big job draining condensate from a battery of autoclaves used for experimental extraction of tanning materials. They are typical of the two hundred Yarway Traps installed on a variety of steam equipment at the big Eastern Regional Research Laboratory of the United States Department of Agriculture.

Why were Yarways selected for this important work? For the same reason that over 450,000 Yarways have been bought in less than 10 years for use throughout all industry. *They get steam equipment hotter, sooner . . . and keep it hot.*

In addition, maintenance is easy. There is only one moving part, a simple valve. Small size speeds installation . . . no extra supports are needed. Yarways are good for all pressures without change of valve or seat. And finally, it often costs no more to install Yarway Impulse Traps than to repair older types.

See your nearest Mill Supply dealer, or write for Bulletin T-1739.

YARNALL-WARING COMPANY
125 Mermaid Avenue, Philadelphia 18, Pa.
Yarway Traps are also made and sold in Canada

YARWAY IMPULSE STEAM TRAP

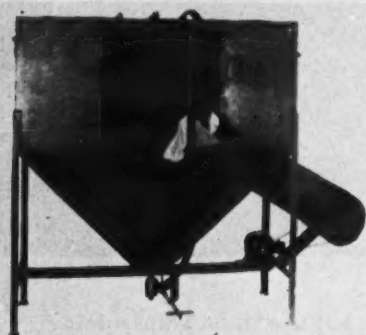
Production

Sandblast Cabinet Has Easy Access

Rotating basket detaches, leaves space for stampings, castings

Uses — Self-feeding sandblast for rapid removal of rust, scale or carbon deposits prior to finishing. Contains motor-driven, rotating, tumbling, removable basket device for thorough cleaning by sand-spray of bolts, buttons and small articles. Also useful in cutting or machining of stampings, castings or forgings.

Features — Combination door and arm-holes with cuffs swings wide open for



Sandblasting cabinet

easy entrance or exit of articles to be sandblasted. Motor-driven basket device for all-over spraying of bolts, etc., may be detached and removed from cabinet to make room for larger pieces, which are held under nozzle by operator and turned until clean.

Description — Sand passes from sand magazine to nozzle, is sprayed on work, and continuously returned by gravity to sand magazine, where process is repeated for as long as required. Further information supplied on request.

LEIMAN BROS., INC., Dept. CP, 179 Christie St., Newark 5, N. J.

When inquiring specify CP A6179
— see handy form pages 2-3

★

Metal Inserts Prevent Erosion, Triple Condenser Tube Life

Condenser tube life can be prolonged as much as three times by using Flowrites, according to an eight-page bulletin. These metal inserts protect against erosion. Available in various lengths. Bulletin shows report of tests conducted at M.I.T. Complete with tables, graphs, pictures and instructions for easy installation. Write for literature.

CONDENSER SERVICE & ENGINEERING CO., Dept. CP, 95 River St., Hoboken, N. J.

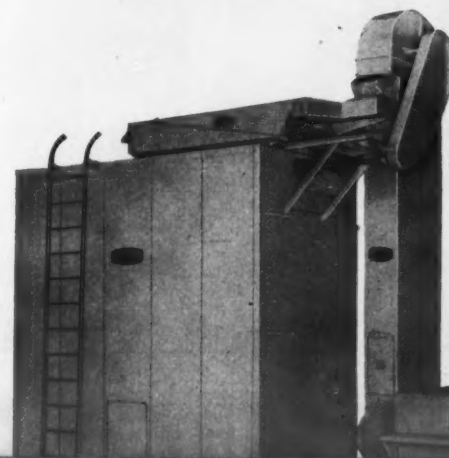
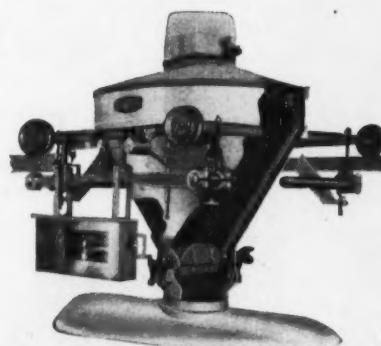
When inquiring specify CP A6180
— see handy form, pages 2-3



...with **READCO**
PROCESSING EQUIPMENT

Engineered for Greater Efficiency . . Designed to Meet Your Exact Needs

YOUR KNOWLEDGE of the job to be done plus OUR KNOWLEDGE of processing machinery will provide you with better, more efficient material handling, Mixing and Blending Equipment for your processing operations. Take advantage of READCO's 32 years of accumulated experience which enables us to interpret projected processes into modern equipment best designed for their practical accomplishment.



MATERIAL HANDLING EQUIPMENT

Material-Handling systems were pioneered by READCO. Our special study of material-handling problems have been responsible for many developments which are today accepted as standard. READCO systems for efficient, coordinated movement of powdered or granular material thru all steps in any process whether continuous or batch operation.

VIBRATING SIFTERS: For efficient sieving and aerating of powdered and granular materials. Removable screen extends full length of sifter. M thorough sieving is accomplished by the combined vertical rotating and horizontal movement of unit.

DUSTLESS WEIGH HOPPERS: Can be furnished for weighing powdered or granular substances. A patented dust-controlling mechanism eliminates dust loss. Designed for either stationary or trolley-mounted operation.

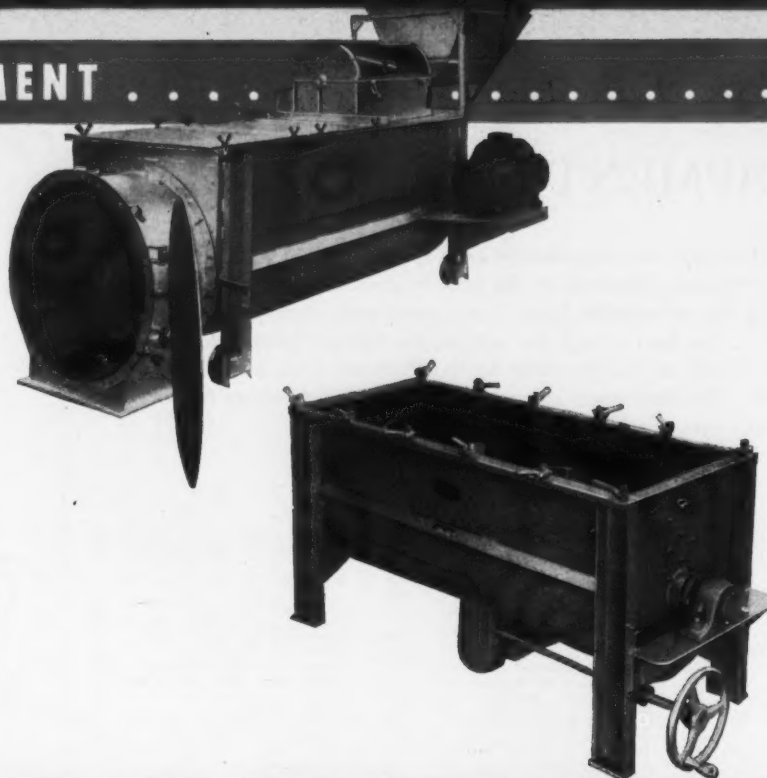
DUMP BINS, ELEVATORS, STORAGE BINS, CONVEYORS: Compact, all metal construction to meet your exact requirements. Flush ports eliminate dirt traps. Welded bases assure perfect alignment. Screw type conveyors and screw or bucket type elevators can be furnished for capacity design.

BLENDING EQUIPMENT

READCO Blenders are engineered to give you maximum blending efficiency.

Note these features:

- ▶ Agitator shaft is mounted in outboard anti-friction bearings.
- ▶ Shaft packing glands are built independent of bearings.
- ▶ Carefully designed counter flow agitator prevents build-up of material at either end of shaft.
- ▶ Slotted end plates permit agitator to be removed vertically from blender.
- ▶ Blenders can be equipped with the usual mulling type agitator or ribbon, trowel or paddle agitators as desired.
- ▶ Temperature control jackets and spray nozzles can be furnished if needed in your processing methods.

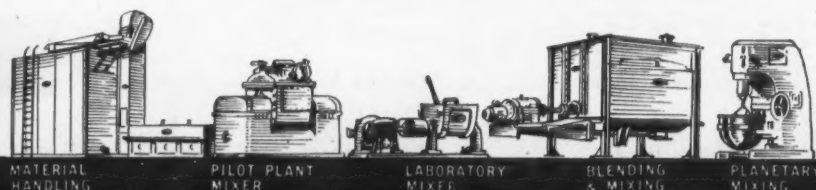


YOU GET THESE 5 BENEFITS WITH READCO

- 1 **ENGINEERING FOR THE JOB:** Designed and built by engineers and mechanics who are thoroughly skilled in the requirements of all types of processing equipment and who are willing and anxious to coordinate your ideas to fulfill your process needs.
- 2 **MORE UNIFORM PRODUCT:** Exclusive READCO designed automatic feeder devices, accurate weighing mechanisms and cut-off gates assure you of easier control of product uniformity.
- 3 **TROUBLE-FREE OPERATION:** Rugged, compact READCO design cuts maintenance costs to a minimum.
- 4 **INCREASED PRODUCTION:** READCO equipment is designed for straight-line handling from ingredient storehouse through manufacturing process—result is more efficient production.
- 5 **PROVEN EFFICIENCY:** Hundreds of the largest chemical processing companies in the United States and the world are satisfied users of READCO processing equipment.



TODAY—more than ever—you need efficient READCO material-handling, blending and mixing equipment. READCO produces an almost limitless variety of standard and special chemical processing equipment, each developed for a specific purpose. See your READCO representative TODAY. Write for our latest catalog—a "must" for your equipment library.



MACHINERY CO., Inc.

Production

R40 Infra-Red Lamps In 250 & 375 W. Sizes

250-375 watt bulbs built for
severe industrial use

Uses — Heat-resistant R40 infra-red lamp for severe industrial use, as in case of drying ovens containing volatile fumes. Also R40 high foot-candle output flood lamp for both high and low bay areas in industrial plants, stores, etc.; and for indoor and outdoor display lighting, amusement and sports areas, service stations and parking lots.

Features — R40 infra-red lamp: made of special heat-resisting glass to reduce hazard of breakage from thermal shocks.



R40 infra-red Hi-Heat lamp

Long life reduces lamp replacements and production interruptions. High safety factor. Built to withstand sudden temperature changes.

R40 flood lamp: special heat-resisting glass eliminates necessity of using metal reflectors, since lamp resists thermal shocks. This glass makes it possible to furnish 500 watt lamps with R40 bulbs and bases which fit in ordinary fixtures. Internal reflecting surface unaffected by dirt or corrosion, reducing maintenance costs. Light is directed where required. Designed for severe service conditions. Weatherproof. High foot-candle output.

Description — Radiant R40 "Hi-Heat" Reflector Infra-Red Lamps: available in 250 and 375 watt sizes. Max. over-all length 7 1/4".

Radiant R40 "Hi-Flood" Reflector Floodlights: sizes include 300 and 500 watt. Max. overall length 6 1/2" to 7 1/2".

RADIANT LAMP CORPORATION,
Dept. CP, 300 Jelliff Ave., Newark 8, N.J.

When inquiring specify CP A6181
— see handy form pages 2-3

For more information on product at left, specify CP A6182
... see information request blank between pages 2-3.

Discussed in This Issue - - -

MACHINERY, EQUIPMENT and MATERIALS



Use this "quick-locator" when you want information on a specific type of machine, equipment or material. Everything discussed in this issue is given here, with page references. After checking the information here, if you want more data you can write manufacturer direct . . . or turn to pgs. 2-3 and use the handy "Information Request Slip." This is a special service provided by the Publisher . . . no obligation or charge, of course. The Publishers contact the proper manufacturers for you . . . information comes to you direct.

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CASE HISTORY No. 10
One in a series of factual experiences of a group of American manufacturers with Multi-wall Paper Bags.

COST COMPARISON (Per Ton)

	Burlap Bags	Paper Bags
Container cost . . .	\$2.18	\$1.70
Labor cost55 1/2	.30 1/2
Total bag and labor cost	\$2.73 1/2	\$2.00 1/2
Saving, paper over fabric . . .		73¢

CLASS OF PRODUCT PACKED

CEMENT	FERTILIZER ✓
CHEMICALS	FOOD
FEEDSTUFFS	MISCELLANEOUS

PRODUCT CHARACTERISTICS

ABRASIVE	GRANULAR ✓
CORROSIVE	HEAVY
DELIQUESCENT	HYGROSCOPIC ✓
FLUFFY	LIGHT
FREE-FLOWING	VISCOUS

ST. REGIS BAG PACKAGING SYSTEMS are made in a variety of capacities, speeds, and manpower requirements to suit specific products and plant layouts. Machines are available in types to meet the special characteristics of a wide range of products, with filling speeds as high as twenty-four 100-lb. bags per minute — with one operator.

OF PACKAGING EFFICIENCY

Realizing in 1941 that burlap might become scarce, the company installed three 160-FB St. Regis Packers and changed over to Multiwall paper valve bags. With this

HERE'S HOW IT WORKS—One man operates the St. Regis Packer, shown at left, which simultaneously weighs and fills the bags. A conveyor carries the factory-closed paper bags to a scale where they are check-weighed and then stacked on pallets. Fork lift trucks take the pallets to storage, to freight cars, or to waiting trucks. The entire operation is simple, compact, and efficient.

CONTAINER COSTS REDUCED 22%
—Multiwall paper bags cost \$1.70 for each ton packed . . . 167-lb. burlap bags cost \$2.18 per ton.

CUSTOMER ACCEPTANCE—Paper bags protect against caking of contents—a problem often experienced with the use of burlap bags. And customers find 100-lb. Multiwalls easier to handle than bulky 167-lb. burlap bags.

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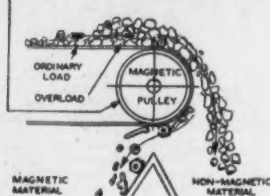
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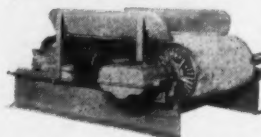


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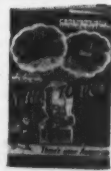
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Coffee Pot Brews Coffee With Less Caffeinetic Acid

Among recently registered patents reported in Domestic Commerce for September is one for a coffee pot utilizing a basket for ground coffee removably attached to the perforated bottom of a water container. By means of a push rod the basket and container are lowered to the bottom of the pot. Then they are slowly returned by a spring to the original position. Ground coffee is thus brought into contact with water as many times as necessary to obtain the strength without boiling. The boiling reportedly extracts the caffeinetic acid from the grounds. Registry Number is 421.

Plastic Coated Work Gloves

In the current leather shortage, various work glove manufacturers have investigated the possibilities of vinyl butyral to coat Canton flannel gloves, treating the thumb, index finger and palm surface and leaving the backhand and other fingers untreated so that the glove may "breathe." Oil and grime may be removed from the treated surfaces with solvent. The gloves may be laundered as the plastic is relatively unaffected by washing. (Monsanto Chemical Co., St. Louis, Mo., supplies the plastic material to glove manufacturers.)

New Machine Speeds Boring of Railway Car Wheels

A new railway car wheel boring machine with capacity of more than ten times that of any pre-war machines of its kind has recently been put into service by the Pullman-Standard Car Manufacturing Co. The machine feeds a rotating boring tool into the hub of a stationary car wheel instead of the conventional rotation of a car wheel under a stationary drill.

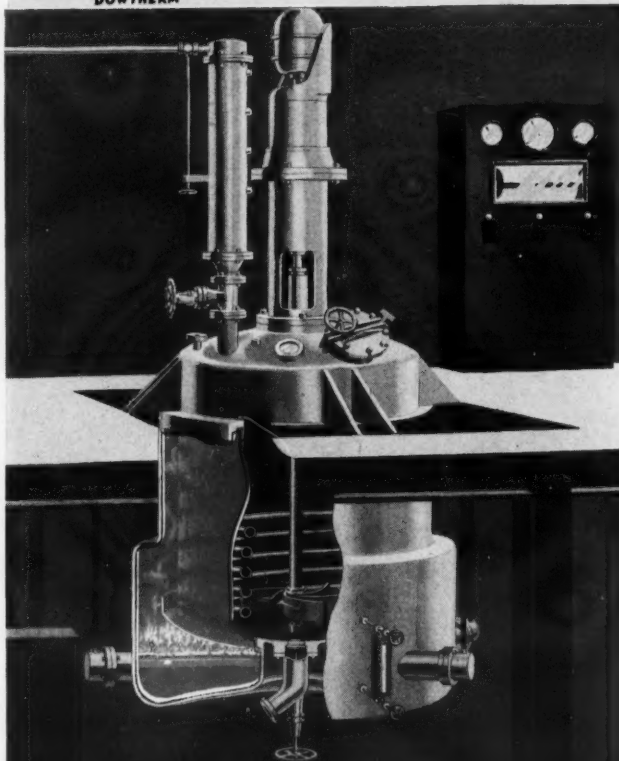
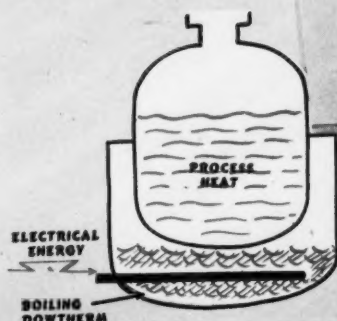
Six or More Fractional HP Motors in Average Home

The average American home contains from six to half a dozen fractional horsepower motors, according to estimates by the Civilian Production Administration. The shortage of these small motors for warm air furnaces results from their diversion to other home uses, such as refrigerators, fans, vacuum cleaners, sewing machines, washing machines, electric clocks, kitchen mixers, ironing machines, and phonographs. (Domestic Commerce-Sept. '46.)

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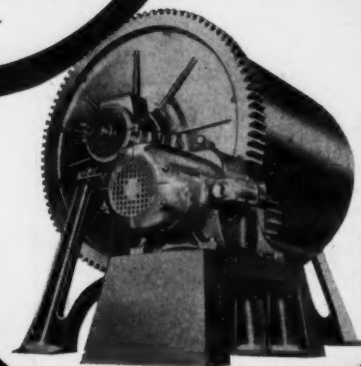
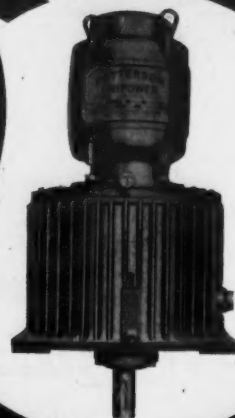
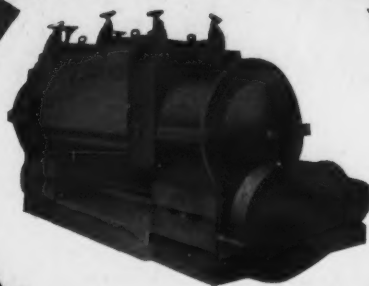
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